HEALTH AND MARINE HOSPITAL
PUBLIC HEALTH SERVICE
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U. S. Public Health Service
36th.

ANNUAL REPORT OF THE

Surgeon-General of the Public Health and Marine-Hospital Service of the United States

FOR THE FISCAL YEAR

1907

1906/07

86218
27/3/08

WASHINGTON
GOVERNMENT PRINTING OFFICE
1908

TREASURY DEPARTMENT.

Document No. 2498.

Public Health and Marine-Hospital Service.

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OPERATIONS

OF THE

UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE

1907

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LETTER OF TRANSMITTAL.

TREASURY DEPARTMENT,
Washington, January 6, 1908.

SIR: In accordance with section 9 of the act of Congress approved July 1, 1902, entitled "An act to increase the efficiency and change the name of the Marine-Hospital Service," I have the honor to transmit herewith the Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service for the fiscal year 1907.

Respectfully,

GEO. B. CORTELYOU,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

TREASURY DEPARTMENT,
BUREAU OF PUBLIC HEALTH AND
MARINE-HOSPITAL SERVICE,
Washington, D. C., November 19, 1907.

SIR: I have the honor to submit, for transmission to Congress, in accordance with the act of July 1, 1902, the following report of the transactions of the Public Health and Marine-Hospital Service of the United States for the fiscal year ended June 30, 1907, this being the thirty-sixth annual report of the Service in the one hundred and ninth year of its existence, and the sixth annual report under its present name.

BUREAU OF PUBLIC HEALTH.

Five years of administration, under the above-mentioned act of Congress by which a Bureau of Public Health with six well defined divisions was established, have demonstrated the beneficial influence of this law, and, considered with a previous law establishing the Hygienic Laboratory "for the investigation of infectious and contagious diseases and matters relating to the public health," it would seem that Congress has established a public-health bureau with a broad foundation. But, more than this, it has provided a Service whose personnel consists of trained medical and scientific officers devoted only to the interests of the public health. Some additional functions and administrative enlargement are, however, desirable and will be subsequently mentioned.

The Hygienic Laboratory, through its advisory board, composed of members attached to other leading laboratories, is brought in touch with the scientific work of other institutions of the United States, while the more practical questions concerning the suppression of disease and sanitation are the subjects of discussion with the State boards of health, whom the Surgeon-General is obliged by law to invite to meet in annual conference. The law also provides for more frequent conferences of this character. Thus the Service receives and bestows the advantages of scientific affiliation; and its practical work is coordinated with that of the State and municipal health authorities.

The activities of the Bureau during the past year will be given in detail in the reports of the different divisions, but it is deemed proper to refer here to some of the more important features of the year's work.

INVESTIGATION OF TYPHOID FEVER IN THE DISTRICT OF COLUMBIA.

One of the most interesting and important duties of the Service during the past year has been the investigation of typhoid fever in the District of Columbia, reference to which was made in the last annual report. A bulletin of 360 pages containing the report on this subject has been published and has been widely recognized as a valuable addition to modern knowledge of the transmission of this disease. It already has been productive of excellent results, in that it has led to the closing of wells in the District and an agitation of the subject of the milk supply, and of the necessary measures to rectify the insanitary conditions on dairy farms. It has called into prominence a number of factors in the spread of typhoid to which too little attention has been paid.

Though primarily an investigation of the fever in the District of Columbia, the report is of practical value to the administrative officers of all municipalities. It was found, however, that to solve all the problems connected with the investigation the board of officers detailed for this purpose should be continued. Much additional information has been obtained and will form the subject of a second volume.

Investigations of the same disease have been made in Savannah, Ga., and Charlotte, N. C.

INVESTIGATION OF THE MILK INDUSTRY.

Another and allied investigation is that of the milk industry "from farm to consumer," undertaken by special direction of the Secretary of the Treasury and the President, in which the Bureau has had the cooperation of the Bureau of Animal Industry and the Bureau of Chemistry of the Department of Agriculture and the health department of the District of Columbia. This work has been completed and will soon be published. No sanitary subject is engaging greater attention in the United States at the present time than that of milk, which, more than any other substance, unless it be bread, is the universal food. The report contains 21 articles bearing upon practically every phase of the production and transportation of milk from the farm to the consumer, the diseases which it carries, and the most recent advances in its bacteriology and chemistry. To assure clean milk of good quality is one of the most important duties of health officers, to whom this report will give assistance in this endeavor.

SUPERVISION OF VACCINES AND CURATIVE SERUMS.

The supervision of vaccine virus, serums, and toxins, under the law of July 1, 1902, has been carefully maintained, and it may be said that the effect of this law has been excellent. Fourteen establishments in the United States, one in Germany, and one in England, have been critically inspected, and given licenses by the Secretary of the Treasury to sell their products in the United States. The regulations

require that each of these establishments shall be inspected every year, precedent to the renewal of the license. The inspections are made by qualified officers of this Service, who make reports upon blank forms, on which are itemized every feature of the establishments inspected, including the equipment, professional methods, and the products for which license is desired. These products are obtained at the establishment itself, but more frequently are bought in the open market and tested for purity and potency in the Hygienic Laboratory. The reports on the laboratory investigation and from the inspecting officer are forwarded to the Bureau, where they are reviewed by the Bureau sanitary board. Based upon these reports and the recommendation of the Surgeon-General, the Secretary of the Treasury issues the license.

Additional regulations have this year been issued to further insure the purity of vaccine virus by demanding bacteriological examination of every lot of vaccine collected at the vaccine farms; and establishing an official standard for use in measuring the dosage of tetanus antitoxin. Before the official adoption of this standard the tetanus antitoxic serums were weak and variable: now complete confidence may be placed in any such serums manufactured under the law of July 1, 1902, not only as to purity but as to potency.

It becoming known to the Bureau that State and municipal boards of health were purchasing vaccines, serums, etc., under contract, said boards have been invited to send samples to the Hygienic Laboratory for examination to ascertain if these large lots are of the same purity and potency as samples purchased in open market, and a number of boards of health have already availed themselves of this offer.

During the year certain lots of antidiphtheric serum of one firm were found to be lacking in potency. Their attention was called to this fact by the Bureau, and the firm immediately recalled all the serum under their laboratory numbers and expressed a determination to prevent a recurrence of the low potency. Complaints were also received in the Bureau that certain serums, after their period of potency had expired, and after removal of the old labels, had been relabeled and these relabeled products placed on the market. The labels contain the date to which the serum is guaranteed by the manufacturer to retain its potency. In the trade it is customary to return the serum at this date and receive fresh serum in its stead. This complaint was referred to an inspector, who received assurance that such relabeling had been discontinued. Special attention will be paid to the prevention of a repetition of this violation of the regulations.

One foreign firm was found to be sending its products to the United States without a license. They were notified of the necessity of a license and an inspection prior thereto. They refused to permit an inspection, and accordingly the Secretary of the Treasury has directed the customs officers to refuse entry of any virus, serum, or toxin applicable to the prevention and cure of the diseases of man manufactured by this firm. Their agents in the United States have been advised of this action and that the sale of any of these products in the United States is illegal.

It will be seen that great care is exercised in the enforcement of this law, which is so essential to insure purity and potency of this most important class of therapeutic preparations.

HOOKWORM DISEASE.

One of the most interesting and important subjects coming within the purview of the Bureau has been the prevalence of hookworm disease as discovered by an officer of this Service while investigating the cause of the bad physical condition of certain mill laborers, particularly child laborers. The unfortunate physical condition of so many of the child workers in the mills has been found to be due in large measure to this disease. The medical zoologist of the Service was detailed to assist the Commissioner of Labor in his investigation of woman and child labor in the United States under the law of January 29, 1907.

A previous report upon hookworm disease, particularly in the South, was made by the zoologist of this Service in 1903, and following his published report the matter was taken up in Porto Rico, where much of the anemia and weak physical condition that prevailed among the working classes was found to be due to this disease. So important was the matter that the Porto Rican government made a large appropriation and appointed a commission to eliminate the disease among the inhabitants, which it has in large measure accomplished.

The full report of this year's investigation has not yet been received, but occasional reports show very clearly that the prevalence of hookworm disease, in the States in which investigation has been made, is sufficient to account in large measure for much of the hitherto unexplained anemia and physical debility. Hitherto these cases have been attributed to malaria or other debilitating diseases.

One of the chief factors in the spread of the disease is soil pollution. The disease is readily curable, and the insanitary conditions responsible for its propagation are remediable. A complete report from the standpoint of public health has been called for, and when the full importance of this investigation is realized and necessary sanitary measures have been enforced it is confidently expected that great improvement will result in the physical condition of the class of laborers who are thus affected. Information relative to this disease and the measures necessary for its prevention will be widely diffused.

TUBERCULOSIS.

With regard to tuberculosis, the suppression of which is engaging the activities of all civilized countries, the operations of the General Government relate to the exclusion of immigrants thus affected, the carrying out of the President's order for the prevention of the spread of this disease among Government employees, the maintenance of sanitariums for tuberculous patients of the Army, the Navy, and the Public Health and Marine-Hospital Service, and the encouragement, in so far as the General Government may participate, of all efforts of States and municipalities for its suppression.

Reference will hereafter be made to the coming International Congress on Tuberculosis, at which it is expected the General Government will be represented by the personnel of several of its De-

partments and by an exhibit contributed by its several scientific laboratories.

The sanatorium for tuberculous patients conducted by this Service at Fort Stanton, N. Mex., continues to give good results, 101 patients having been discharged during the past year as cured, or with the disease arrested.

HYGIENIC LABORATORY.

The scientific work of the Hygienic Laboratory of the Service, as expressed in the bulletins issued therefrom, has excited widespread and favorable comment among scientists and public-health officials both in this country and abroad. Plans for the additional building to cost $75,000, authorized by Congress at its last session, have been prepared and it is expected that the new building will be erected within a year, thus doubling the capacity of the laboratory.

Twelve qualified scientists and 20 employees compose the present working force of the laboratory, but for special investigation officers from the general service are detailed from time to time as required. These, together with the officers who are detailed to pursue a course of instruction, add numerically to the force of workers.

The facilities of the laboratory are also given occasionally to officers of other Departments and of neighboring republics.

The operations of the laboratory embrace research work of the highest scientific character, practical sanitary investigations, and instruction to officers of the Corps, and occasionally to municipal and State health officers.

PLAGUE IN SAN FRANCISCO.

A fatal case of plague was reported to the Bureau from San Francisco in May, 1907, a little more than three years after the last case had been reported in the outbreak in the same city, which, beginning in 1900, was not entirely eradicated until February, 1904. No case immediately followed this case reported in May, but on the 8th of August, three months afterwards, another case was reported, and up to the date of this report there have been in all 96 cases and 60 deaths. It has been impossible as yet to discover the origin of the present outbreak.

A full report upon this matter will be included in the report of the Service for the year ending June 30, 1908. A brief statement of the transactions up to the present time (date of this report) is here made.

The cases, at first appearing along the wharves on the water front and in old Chinatown, were subsequently not confined to any particular section. Measures were at once taken to prevent the spread by vessels to any other port, domestic or foreign, by establishing a fumigation service for destruction of rats on all vessels leaving San Francisco harbor, at the same time requiring a careful inspection and refumigation if necessary at all domestic ports on the Pacific coast. The local and State authorities were active in their measures to suppress the disease in San Francisco, assisted by officers of this service, but on September 4 a telegraphic request was sent to the President by the mayor of San Francisco, requesting the Federal Government

to take immediate charge of the work of suppression. The Surgeon-General of the Public Health and Marine-Hospital Service was instructed by the President and the Secretary of the Treasury to comply with the request. An experienced officer was detached from his duty as sanitary director of the Jamestown Exposition and immediately sent to take charge of measures in San Francisco. Eight commissioned officers were sent to assist him and he was authorized to appoint 6 acting assistant surgeons and other employees. Recently, by urgent request of the local and State authorities, he has been authorized to employ laborers and to undertake certain other details of the work in further extension of aid to the city. The commanding officer reports at this date that the disease is diminishing, that the organization is complete, and the work which consists largely in the destruction of rats and the correction of insanitary conditions, is being pushed vigorously. He states, however, and in his view the Bureau concurs, that while the disease may be kept in check it will necessarily require a long time for its complete eradication. This is better understood by reason of the fact that the disease prevails among rats and that the fleas on the rats convey the disease from one rat to another and to human beings.

A case of plague was reported in Seattle, Wash., October 16, 1907. The governor of Washington and the health authorities of the State and city requested the Service to take charge and, with the approval of the Secretary, an experienced medical officer was sent to Seattle and has organized a thorough system of inspection and disinfection, the State and local boards of health cooperating. Two cases have been reported from Seattle, but no case has been reported since October 30.

SANITATION OF JAMESTOWN EXPOSITION.

An important work of the Service, and one involving great responsibility, was the supervision of sanitation at the Jamestown Exposition. By request of the president and board of governors of the exposition a medical officer was detailed and designated as sanitary director. Early in October, 1906, he began his work of drainage and other measures necessary to eliminate the mosquitoes. These insects infested the site in great number, but by the time of the opening of the exposition, and throughout its period, the grounds were entirely free from this pest. Great care was successfully exercised to prevent typhoid fever among the employees and among the troops that camped upon the exposition grounds. This involved radical measures relating to water supply and drainage, disposal of garbage, examinations of milk and other foods, and the prevention of the breeding of the house fly. At one time, while the exposition grounds were in good condition, adjacent property not under the control of the exposition authorities was presenting conditions so grossly violating sanitary principles that the exposition itself was threatened. To control these conditions the medical officer succeeded in having himself appointed a county health officer and under the ægis of certain county laws enforced the sanitary requirements.

The good health of the employees and the freedom from infection among the visitors are attributable to the sanitary measures taken prior to and during the exposition.

LEPROSY INVESTIGATION STATION—MOLOKAI.

During the year earnest efforts have been made to hasten the erection of the buildings for the leprosy investigation station on the island of Molokai, Territory of Hawaii. The plans were duly completed and advertisement made, but the bids received were in excess of the appropriation. It was found impossible to get any reasonable bid, largely because of the isolated location and the difficulty of employing laborers who had perhaps natural though unnecessary fear of contagion. The Department finally determined to have the buildings erected under the supervision of a constructor and without formal contract for the whole work. Accordingly a constructor familiar with the whole situation and one who is also competent as an architect, an employee of the Department, was sent to Honolulu to prosecute the work. In the meantime, the medical director of the station and an assistant are engaged in preliminary investigation both at Honolulu and Molokai. It is expected the buildings will be erected early during the coming fiscal year.

NATIONAL QUARANTINE.

The national quarantine service has required a more than usual activity on the part of the Bureau during the last year. There are 43 national maritime quarantine stations in the United States, and at these 4,635 vessels were inspected and 478 disinfected.

The act of Congress approved June 19, 1906, provided for the taking over of the principal Southern quarantine stations that were still under State administration, and under this law the Service has acquired possession of all the quarantine stations of South Carolina and the Mobile and New Orleans quarantine stations. A site has been selected also at Galveston, where it will be necessary to erect a new station at a cost of about $100,000. This work can not begin until title to the site has been obtained, which may cause some delay.

The national quarantine service now has jurisdiction over the whole of the Pacific coast, the Gulf coast with the exception of Texas, the Atlantic coast with the exception of Baltimore, New York, Boston, and a few of the neighboring minor ports. These remaining State or local stations, however, are required to enforce the national regulations.

A very important and interesting portion of the quarantine administration is the fruit-port inspection service, medical officers being stationed in 10 of the principal fruit ports of Central and South America, detailed by the President in the offices of the American consuls, to insure such care in the sanitation of the vessels as to warrant their admission at the Southern ports of the United States without detention which would destroy the fruit. The effect of these officers in the fruit ports is most salutary, and has enhanced their sanitary condition.

The quarantine administration in the Philippines under officers of this Service has been so successful as to excite much favorable comment. There has been practically no plague or smallpox in the Philippines during the past year. The Service conducts 7 maritime

quarantine stations in the Philippines, 7 stations in the Hawaiian Islands, and 8 in Porto Rico.

In addition to the medical inspectors in fruit ports there are medical officers at the principal ports of Japan and China, one at Calcutta and one at Naples. Besides their quarantine duties these officers also examine departing emigrants.

BUREAU PUBLICATIONS.

A great aid to the administration of the quarantine service are the bulletins of public health ("Public Health Reports") issued weekly to quarantine officers, consuls, and sanitarians, both at home and abroad. These contain timely information regarding all epidemic diseases throughout the world. They also contain sanitary reports and morbidity and mortality statistics.

Besides this regular publication, the Bureau has transmitted to health officers and others short bulletins on vaccination, methods of suppressing smallpox, on scarlet fever, diphtheria, and measles, articles on malaria, on the climate of New Mexico, and two works of especial value by officers of the Service, one on trachoma and one on yellow fever and the mosquito. In these last two volumes are included the latest and most scientific considerations of the diseases to which they relate.

MEDICAL INSPECTION OF IMMIGRANTS.

The professional work connected with the medical inspection of immigrants has been largely increased, 1,285,349 immigrants being inspected at the ports of arrival. Many immigrants, it is true, are inspected at foreign ports, but the chief reliance is on the examination at the port of arrival. The last immigration act, approved February 20, 1907, imposes additional responsibility on the Service, and new regulations have been prepared to meet the changes and additional duties called for by the new law. The quarantine officers at the foreign ports, excepting fruit ports, examine immigrants in addition to their other duties, and the Service inspection of arriving immigrants is carried on in our insular possessions, namely, Porto Rico and the Philippines and the Territory of Hawaii.

At Ellis Island, N. Y., in addition to the inspection service, the large hospitals are under the medical supervision and professional care of the officers of this Service.

SURGEONS ON REVENUE CUTTERS.

Seven commissioned officers have been detailed for duty as surgeons on as many steamers of the Revenue-Cutter Service. The reports of those on vessels cruising in Alaskan waters and the Bering Sea include interesting statements concerning the diseases among the natives of Alaska and conditions affecting the welfare of the sailors on whaling vessels.

MARINE HOSPITALS.

In the 21 marine hospitals of the Service, and the 123 marine-hospital stations where hospital relief and professional care are furnished, 55,113 patients received treatment, 14,984 being treated in

hospital and 40,129 as dispensary or out-patients. Eighteen hundred and twenty-one surgical operations requiring the use of anesthetics were performed during the year. The new hospital at Savannah, Ga., was opened November 1, 1906.

The marine hospitals are an integral part of the Public Health Service, giving a location to it in the several States. They are very valuable, also, as giving to the medical corps large professional experience, as well as administrative training. In times of emergency they furnish the trained officers for special duty, their places at the hospitals being supplied by junior officers or temporary acting assistant surgeons until the emergency or special duty has expired.

EFFECTIVE AID AND INFLUENCE CONTRIBUTED BY SERVICE OFFICERS.

An interesting feature of the Service is its detail of officers to assist other Departments of the Government and its association with medical conventions and societies. In illustration of the former may be mentioned the detail of Surgeon Carter and Passed Assistant Surgeons Perry and Pierce for duty with the Isthmian Canal Commission. These officers have played a very important part in the quarantine protection and sanitation of the Canal Zone. Passed Assistant Surgeon Heiser, in charge of national quarantine in the Philippines, has for more than two years also been director of health of the Philippine Islands. The director of the Hygienic Laboratory, by request, appeared before a committee of the legislature of Pennsylvania to explain the care now exercised with regard to the manufacture of vaccine virus. Passed Assistant Surgeon King served, by request of the governor of Porto Rico, on its hookworm commission. And at the present time, as heretofore stated, the zoologist of the Hygienic Laboratory is making investigation of the hookworm disease, by request of the Commissioner of Labor, to show the bearing of that disease on the physical condition of child laborers in certain mills.

The Service has always encouraged its officers to attend medical societies and State health organizations and many addresses on important health matters are annually delivered by its officers before these societies. The officers exercise an influence also by frequent contributions to the medical press, 40 articles having been contributed during the year. Formal details were made to eleven medical or hygienic associations, in which the officers of the Service took an active professional part.

SANITARY CONFERENCES.

The fifth annual conference of the State boards of health with the Surgeon-General of this Service required by law was held in Washington last May. There were 20 States and the District of Columbia represented. The transactions are printed in a separate volume and include discussions on the sanitary supervision of milk supplies, the geographical distribution of malaria and bacillus carriers, the latter topic referring to persons apparently well yet carrying disease bacilli, notably the bacilli of typhoid fever.

Three international meetings relating to the public health in which the Service must actively participate are to be held in the future, as follows: First may be mentioned the Third International Sanitary

Convention of American Republics to be held in the City of Mexico from December 2 to 7 of this year. Delegates from the United States have been appointed. This is a strictly official convention, no membership being allowed save on official certificate from the several Republics. It will be expected to carry out instructions formulated at the Conference of American States in Rio Janeiro in August, 1906. Second may be mentioned the International Congress of Tuberculosis, which meets in Washington in September, 1908. Congress will be asked to provide an appropriation for an exhibition relating to tuberculosis prepared by the scientific bureaus of the several Departments. Third, the International Congress of Hygiene and Demography, which meets every three years, and which met this year in Berlin, Germany, has been invited by the President, through the Department of State, as authorized by act of Congress, to hold its next meeting in 1910 in Washington. The Congress has accepted the invitation.

By participation in these congresses and conventions the Service both bestows and receives inspiration and information of practical value.

PERSONNEL.

For the performance of the duties as outlined above the personnel of the Service numbers 118 commissioned medical officers, 3 special scientists in the Hygienic Laboratory, 255 acting assistant surgeons, 47 pharmacists, and 851 employees. The Bureau force consists of 6 commissioned medical officers, 22 clerks, and 6 employees.

FUNDS AVAILABLE DURING THE YEAR.

The funds appropriated by Congress for the fiscal year 1907 may be enumerated as follows: For the Bureau, salaries of the Surgeon-General, 22 clerks, and 6 employees, $41,380; for the ordinary maintenance of the Service, $1,185,000, specific amounts being named for the pay of officers and employees, the maintenance of the Hygienic Laboratory, the purveying depot, for the medical inspection of immigrants, for the conduct of the marine hospitals and relief stations, fuel, light, and water, etc.; for the quarantine service, $340,000; for the prevention of epidemics, $497,453.04.

In addition to the above the Service participated in the appropriations made for the Treasury Department for repairs and preservation of public buildings, heating apparatus for public buildings, printing, and some minor appropriations.

There were also available certain specific appropriations, made previous to the fiscal year but unexpended; for example, the appropriation of $500,000, in the quarantine act of June 19, 1906, for the purchase or erection of quarantine stations in the yellow-fever zone; for the construction of the leprosy investigation station in Hawaii, $99,613; for the maintenance of this station, $47,392.23; for use in the construction of marine hospitals and quarantine stations, $126,589.29, being for the most part small balances left over from previous appropriations; total, approximately, $2,837,427.56.

The above statement is given to show in round numbers about what are the annual expenses of the Service. It should be borne in mind that this is a statement of the amount available, the actual amount ex-

pended being set forth in detail under the heading "Financial statement" further on in this report.

RECOMMENDATIONS.

It is pertinent now to consider certain measures additional to those above related, which at the present time are receiving consideration by the Bureau, and which should receive some recognition on the part of Congress.

Typhoid fever.—First may be mentioned Federal regulations to prevent the spread of typhoid fever. The necessity of regulations of this character has been demonstrated within the last three months by the discovery that a certain passenger vessel on the Great Lakes had discharged during the late summer and fall a large number of cases of typhoid fever at a number of ports. At one port alone 22 cases were discharged between July 13 and September 26, and it is estimated that the total number of cases contracted on this vessel was 77, and it is reasonable to believe that other passengers were taken ill after leaving the boat. The water supply of the crew was found to be contaminated and unsafe for drinking, while the milk supply was found to be not up to municipal standard, and it is safe to infer from all the facts elicited that this disease was caused by the above-named facts. The investigation not yet completed shows that cases have been taken from a number of other vessels, and sufficient facts have already been established to demonstrate the necessity of Federal surveillance of these vessels engaged in interstate traffic to prevent their disseminating this infectious disease.

At the same time the Bureau has received a report showing the probability of the same conditions prevailing to some extent on railway passenger trains.

A regulation, therefore, is being prepared under the interstate section of the quarantine law of 1893. There is, however, no penalty accompanying this section of the said law, and the addition of another section to the law is recommended providing for penalties for violation of the regulations made thereunder.

Pollution of streams.—Closely connected with this subject of the spread of typhoid fever is the pollution of streams. This subject is recognized as one of the greatest importance. In the Fifty-sixth Congress a bill was introduced authorizing the Service to make investigation and report, but failed to receive favorable action. A new bill providing for such investigation as may be necessary to prevent the pollution of streams where the pollution affects the people of more than one State will shortly be submitted to you for approval. The increasing pollution of these interstate waters should receive the attention of Congress at an early date.

The prevention of the pollution of streams would involve also a consideration of methods of purification of sewage.

Tuberculosis.—With regard to further aid that might be rendered by the Service in suppression of tuberculosis, one of the most important and effective methods would be the diffusion of knowledge concerning this disease. This might be accomplished readily by the preparation and distribution of short treatises on the subject, particularly relating to the transmission and methods of prevention. To be effective this would require very large editions, for which

special appropriation should be made. These should be supplemented by lectures and demonstrations by the officers of the Service upon request of and in cooperation with the State boards of health. Several requests for this service have been received. Regulations may be also made under the law of 1893, relating to interstate travel of persons afflicted with this disease, requiring certain precautions on the part of common carriers and the patients themselves.

While the law permits such regulations as are indicated above, regarding both typhoid fever and tuberculosis, there are no funds available for carrying these regulations into effect. Such investigations as have been made with regard to these diseases by the Service have been of necessity laboratory investigations, and under appropriations for the Hygienic Laboratory the expenses have been met, but there is no appropriation for said investigations other than those of a laboratory nature, and wider fields of investigation and surveillance are necessary, and appropriation should be made therefor. If these two diseases could be added to the list of diseases named in the appropriation for the prevention of the spread of epidemic diseases this difficulty would be disposed of. If not included in the epidemic appropriation, then specific appropriation should be made for field, or special, investigations of these two diseases. This, together with the suggested amendment to the quarantine law, imposing a penalty, would greatly increase the efficacy of the Federal authority in its efforts to prevent the spread of these two diseases.

Publications.—It is believed that the influence of the Service would be materially enhanced if special authorization by Congress should be given for the issue of bulletins from time to time on special matters relating to the public health. The publications of the Service now authorized by special law are as follows: The annual report (edition of 4,000 copies), the public health reports, the bulletins of the Hygienic Laboratory, restricted to 10 annually, and the bulletins of the Yellow Fever Institute, restricted to 5 annually. The appropriations for these publications are included in the lump appropriation made for printing in the Treasury Department, under which other occasional publications are also printed subject to the discretion of the Secretary. A broader provision for the printing of Service publications in the interest of public health seems very advisable. The Bureau is often called upon for such pamphlets, conveying information and instruction, as have just been mentioned in connection with the subjects of tuberculosis and typhoid fever, and if furnished at all the determination to publish and the size of the edition must depend largely upon the condition of the general fund provided for the Department. To meet the growing demand for increased Federal activity in the matter of public health no one measure would be more proper or of greater present utility than the enlargement of the Bureau's power, subject to the approval of the Secretary of the Treasury, to convey information through these agencies.

Cooperation with State and municipal authorities.—One of the advances that should be made by the Service in the near future is a closer cooperation with the State and municipal health authorities to bring about uniformity in sanitary measures and in the collection of statistics. As suggested by the health officer of one State, it would appear advisable when so requested to detail an officer of this Service for temporary duty with a State health department in an advisory

capacity. A further means to this end, and a project worthy of independent consideration, is the establishment of a school of hygiene connected with the Hygienic Laboratory of the Service, to which accredited State and municipal health officers might be assigned for a well-defined course of research and special instruction. The plan would include the presentation of authorized diplomas, or the title of doctor of public health. Without doubt the plan suggested would greatly strengthen State and local health administration, and the cost to the Service would be insignificant.

Examination of medical preparations and disinfectants.—A function of the Hygienic Laboratory, which it is deemed essential should be increased, is the examination from a public-health standpoint of new disinfectants and medical preparations, especially those not recognized in the Pharmacopœia or National Formulary. A great deal of this work has already been done in the divisions of pharmacology and chemistry, but it is believed that much more work of this kind should be done in the laboratory, and to do so will require additional technical assistants, for which additional appropriation will be required. New preparations are being constantly placed upon the market, some of them of undoubted value, but others of fraudulent and sometimes dangerous composition. An examination of these products is conducted under the auspices of the American Medical Association, but it is believed that this work is incumbent on the Public Health Service in accordance with the law establishing the Hygienic Laboratory.

The collection of morbidity statistics, climate in relation to disease, and the geography of disease are matters now engaging the attention of the Bureau and demanding its future consideration, and add force to some of the suggestions above made.

Personnel.—In view of the enlarged activities upon which the Service is rapidly entering in response to public demand, and the public health necessities of a growing country, the time is at hand when the personnel of the corps must receive consideration as to compensation and allowances, and the Bureau at Washington be enlarged by the addition of administrative divisions and some additional clerical appointments.

The pay and allowances of the commissioned officers of the Service were originally based upon and equal to those of corresponding medical officers of the Army and Navy, with the exception of the salary of the Surgeon-General, which is less than that of the Surgeon-Generals of the Army and Navy. Some additional compensation must soon be made, and the parity of compensation of the commissioned officers of this Service with the medical officers of the War and Navy Departments must be maintained, as otherwise vacancies in the commissioned corps of this Service will be sure to occur, and new appointments of properly qualified men will be difficult if not impossible.

Two new grades should be established to prevent stagnation in the matter of promotions, namely, those of medical inspector and medical director.

Bureau force.—The present necessities of the Bureau include the addition of a law officer, either by detail or appointment, who should be familiar with the public health laws of the Government, the States, and municipalities, to pass upon the legality of proposed regulations and methods of enforcement of the same. Aside from the above, his

services would be of value in the effort to bring about uniformity of laws, and in the determination of many legal questions which arise in the Bureau.

There should also be attached to the Bureau a sanitary engineer of high professional standing, competent to solve technical problems connected with the purification of water and sewage, the prevention of pollution of interstate streams, and other matters involving knowledge of sanitary engineering.

Provision should also be made by law for the detail of an additional medical officer of the Service to the Bureau to act as editor, and an additional stenographer should be provided to relieve the private secretary of the Surgeon-General from this class of work, which, with typewriting, he is obliged to perform, thus allowing the private secretary to render greater service in more important directions.

Many of the suggestions made above have been under consideration for a long while, but have not been previously made because it was desired to become fully convinced of their advisability or absolute necessity. The interests of the public service demand that they be made now.

In the pages which follow will be found a more complete account of the transactions of the Service during the last fiscal year than has been given in the foregoing summary, arranged under the titles of the several divisions of the Bureau through which they received consideration.

Scientific Research and Sanitation.

Important scientific and sanitary problems have received the careful consideration of the Service during the year. The administrative oversight of this work has been carried on through the bureau division of scientific research and sanitation. A number of opinions relating to sanitation and public health have been furnished to health officers and others. A review of the current medical literature has been made, and the subjects relating to public health have been indexed for future reference. In addition, a brief history of Federal and State action for the prevention of tuberculosis was prepared by Assistant Surgeon-General Kerr and published in the Public Health Reports. At the request of the Department of Commerce and Labor a monograph on the character and effect of trachoma was also prepared for presentation, through the State Department, to the Mexican Government. In 1897 trachoma was classified as "dangerous contagious" within the meaning of the United States immigration law of 1893, and immigrants so afflicted have been debarred from landing since that time. This action has resulted in the reduction of new foci of the disease, and it was believed that similar measures should be adopted in Mexico, as such action would have a like beneficent result in that Republic and aid in the enforcement of the immigration laws on our southern frontier. Because of the importance of trachoma from a public health standpoint, and because of the relation of the Service to the medical examinations of aliens, it was desirable that a short treatise on the subject should be issued for the use of officers and others engaged in public health work.

Two officers of the Service were therefore requested to prepare such a paper. The artist of the Hygienic Laboratory was also called upon to prepare a series of illustrations showing the different stages of the disease. By reason of their long experience with the disease these officers were eminently qualified to prepare such a paper, and the pamphlet was recently received from the Public Printer for distribution. Other officers, upon request of the Bureau, have prepared special papers on public health and sanitary subjects, which were published in the Public Health Reports.

The operations of the Bureau through the division of scientific research and sanitation, with supplemental work in the laboratories, embraced the following, viz, administration of the act approved July 1, 1902, governing the manufacture, barter and sale of vaccines, serums and toxins; operations of the yellow fever institute, including scientific observations regarding the preservation of mosquitoes during winter and experiments with agents commonly used for their destruction; investigations into the origin and prevalence of typhoid fever in the District of Columbia, Charlotte, N. C., and Savannah, Ga.; milk sickness; studies of milk in relation to the public health; investigations of Rocky Mountain (spotted) fever; investigations of leprosy in Hawaii; aid to the Jamestown Exposition and Departments of the Federal Government; the Hygienic Laboratory, and the determination of fleas on the Pacific coast with reference to the transmission of plague.

SUPERVISION OF THE MANUFACTURE OF VACCINES, SERUMS, ETC.

The administration of the act approved July 1, 1902, governing the manufacture, barter, and sale of vaccines, serums, and toxins has been continued as in previous years.

During the fiscal year fourteen establishments were reinspected and relicensed, one additional laboratory was inspected and licensed, and at the close of the year three additional applications were under consideration.

With the view of further insuring the purity of vaccine virus, the following additional regulation was issued by the Secretary of the Treasury, March 13, 1906:

> Each and every lot of vaccine virus shall be examined bacteriologically to determine its freedom from pathogenic micro-organisms, and a special examination must be made of each and every lot to determine the absence of tetanus. Detailed and permanent records of these examinations shall be kept.

This regulation insures the collection of evidence which will be of value to the inspector in making recommendations as to a renewal of licenses.

In addition, both vaccine virus and serums have been purchased on the market in different parts of the country for examination in the Hygienic Laboratory as to purity and potency. Upon request of the city health officer of Cleveland, Ohio, a number of samples of diphtheria antitoxin were examined in the Hygienic Laboratory, and, with one exception, were found to be sterile and to contain the required number of units.

It was discovered in March, 1906, that the Bristol Laboratories, 500 Fifth avenue, New York, were selling so-called antisyphilitic

serum in interstate traffic without a license. These laboratories were inspected February 7, 1905, and after consideration of the inspector's report by the Bureau sanitary board, and upon recommendation of the Surgeon-General, a license was refused by the Secretary of the Treasury.

Notwithstanding this fact, the products of this firm were sold from time to time in interstate traffic. Two samples, purchased on the open market in West Virginia and Pennsylvania during the spring of 1906, were, therefore, forwarded to the Department of Justice, together with the correspondence, bills, and other evidence, with the request that the necessary action be taken to prosecute the offending parties.

With these exceptions, no violation of the law has occurred, and the products offered on the market by the different manufacturers have been very satisfactory.

The following is a list of the establishments having received licenses for the products indicated:

No. of license.	Firm or person.	Products.
1	Parke, Davis & Co., Detroit, Mich	Vaccine virus, serums and toxins.
2	H. K. Mulford Co., Philadelphia, Pa	Do.
3	Dr. H. M. Alexander & Co., Marietta, Pa	Vaccine virus and diphtheria antitoxin.
5	Fluid Vaccine Co., Milwaukee, Wis	Vaccine virus.
6	The Pocono Laboratories, Swiftwater, Pa	Do.
7	National Vaccine Establishment, Washington, D. C	Do.
9	Frederick Stearns & Co., Detroit, Mich	Diphtheria antitoxin and antistreptococcus serum. Pneumolytic serum.
10	....do	Vaccine virus.
12	Chemische Fabrik auf Actien (vorm. E. Schering), Berlin, Germany.	Diphtheria antitoxin and antistreptococcus serum.
14	Health Department of the city of New York	Diphtheria antitoxin.
15	W. R. Hubbert's Serum Laboratory, Detroit, Mich	Do.
16	National Antitoxin Establishment, Washington, D. C	Do.
17	Lederle Antitoxic Laboratories, New York, N. Y	Do.
18	Burroughs, Wellcome & Co., London, England	Do.
19	Memorial Institute for Infectious Diseases, Chicago, Ill	Do.
20	Burroughs, Wellcome & Co., London, England	Antistaphylococcus serum and antityphoid serum.

AN AMERICAN STANDARD FOR MEASURING THE STRENGTH OF TETANUS ANTITOXIN.

One of the most important results of the operation of this law was the production of an accurate standard in this country for measuring the units in a given diphtheria antitoxic serum. This standard was prepared in the Hygienic Laboratory and incorporated as the official standard in the eighth decennial revision of the United States Pharmacopœia.

The necessity of a similar standard for use in measuring the dosage of tetanus antitoxin has long been recognized, as is shown by the fact that in Europe three separate standards are in use—a French standard devised by Roux, an Italian standard by Tizzoni, and a German standard by Behring. In America there were as many different standards as there were manufacturers of this important prophylactic. The necessity for establishing uniformity in the strength of this product in this country is shown elsewhere in this report.

Work upon this subject has been carried on in the Hygienic Laboratory for the past two years, with the result that a standard for measuring the strength of tetanus antitoxin has been devised. The standardization of this serum has, however, been a difficult problem, and a vast amount of highly technical work was devoted to its solution. The crux of the entire problem depended upon obtaining a stable tetanus toxin. This was successfully accomplished by precipitation with ammonium sulphate and preserving the dried poison in a special vacuum apparatus. This dried poison has shown no deterioration in seventeen months. The official unit which went into effect April 1, 1907, is based on the stable tetanus toxin prepared in the Hygienic Laboratory. An amendment to the regulations promulgated under the act of Congress approved July 1, 1902, was therefore prepared and issued by the Secretary of the Treasury as follows:

The immunity unit for measuring the strength of tetanus antitoxin shall be ten times the least quantity of antitetanic serum necessary to save the life of a 350-gram guinea pig for ninety-six hours against the official test dose of a standard toxin furnished by the Hygienic Laboratory of the Public Health and Marine-Hospital Service.

It is expected that further work of this character will be carried on with other therapeutic serums which are now examined for purity, but for which no satisfactory standard of potency has as yet been devised.

THE YELLOW FEVER INSTITUTE.

Aside from imported cases arriving at quarantine, there has been no yellow fever in the United States during the past year. No opportunity has, therefore, been offered for field investigations.

It was believed that a comprehensive discussion of the symptoms and diagnosis of the disease, if published as a yellow fever bulletin, would be of distinct value to officers of the Service and others engaged in public health work. An officer of the Service in the Hygienic Laboratory was especially qualified to undertake the preparation of such a treatise, as the subject of yellow fever has occupied much of his time during the past five years; besides, the epidemic in New Orleans afforded him an excellent opportunity for clinical and laboratory investigations. He was, therefore, requested to prepare such a paper. This manuscript was received in May, 1907, and was published as Yellow Fever Institute Bulletin No. 16. A paper on The Technique of a Yellow Fever Campaign was prepared and read by an officer of the Service before the Association of Military Surgeons in Buffalo, N. Y., September 11, 1906. After the presentation of this paper, the following resolution was adopted by that association:

Resolved, That in view of the importance of the subject and the necessity that such information should be widely disseminated, the Secretary be instructed to publish the paper of Asst. Surg. W. C. Rucker, United States Public Health and Marine-Hospital Service, entitled, "The Technique of a Yellow Fever Campaign," in the journal of the association at the earliest possible date, and that copies be sent to the surgeons-general of the various services, with the recommendation that the article be used and distributed as a Government publication; and be it further

Resolved, That a copy of these resolutions be forwarded to the Surgeon-General of the United States Public Health and Marine-Hospital Service.

In view of the association's action, and the recommendation contained therein, this officer was requested to amplify his article for

publication as a yellow fever bulletin. This he has done, and the manuscript of A Precis of the Administration of a Yellow Fever Campaign has been received. It is expected that it will be published for dissemination among officers of the Service and in the yellow fever zone.

In the Public Health Reports, May 3, 1907, attention was called to an organism which was found in the kidney tissue of a patient dead of yellow fever.

This organism, in general appearance, strongly suggested a *spirochæte*, and, in view of the suggestion made by Schaudinn and Novy as to the probable spirochætal origin of yellow fever, it was believed to be worthy of report.

At the time of report the available material was limited to one case. Since that time, however, steps have been taken to collect further material. It is desirable that these studies should be continued in order, if possible, to determine the relationship between this organism and the pathology of yellow fever.

There is no more important problem in preventive medicine than the discovery of the etiology of this disease, and it should receive unremitting study.

THE PRESERVATION OF MOSQUITOES DURING WINTER.

During the past year there were also conducted interesting and valuable experiments in relation to the life cycle of the *Stegomyia calopus*. Passed Assistant Surgeon Francis collected eggs of this genus of mosquito in Mobile, Ala., August 16, 1906, and preserved them in the dry state at practically outdoor temperatures until February 27, 1907, a period of six and one-half months. Upon the addition of water these eggs hatched into adult mosquitoes; these, in turn, laid eggs which developed into larvæ. A report of these experiments, together with other observations regarding the habits of this mosquito, appeared in the Public Health Reports April 5, 1907. These experiments demonstrated that it is possible for the *Stegomyia calopus* to survive a southern winter in this way as well as by hibernation.

Experiments of this character will be continued to determine the viability of mosquito eggs dried and preserved for longer periods and under varying conditions as to temperature.

RELATIVE VALUE OF CULICIDES.

In a report which was published in the Public Health Reports, June 29, 1906, it was reported that the fumes of pyrofume, a liquid derived from the fractional distillation of pine wood, are deadly to *Stegomyia calopus* and *Culex pungens*.

Mosquitoes placed in cages on the floor of a room containing the fumes from 265 c. c. of this liquid per 1,000 cubic feet of air space were found dead after one hour.

Following the appearance of this preliminary report, numerous inquiries were received relative to the powers of the various culicides, and Passed Assistant Surgeon Francis was requested on August 3, 1906, to continue further scientific investigations along this line in conjunction with the other duties at his station. These studies comprised series of experiments on the culicidal properties of camphorphenol, sulphur, and pyrofume.

In the experiments great care was taken to protect artificially the mosquitoes in such a way as to simulate the conditions which ordinarily aid the mosquito in avoiding the effects of harmful gases.

A report of the work with sulphur and camphor-phenol appeared in the Public Health Reports, March 29, 1907. The experiments with sulphur confirmed the value of this agent so long used in quarantine practice. On the other hand, the experiments with camphor-phenol led to the conclusion that this agent is uncertain in its action, it possesses no powers of penetration, diffuses poorly, and its efficiency is diminished by low temperatures. As a result of the further experiments with pyrofume it was reported in the Public Health Reports, April 19, 1907, that, while the fumes of this agent, when generated in the amount mentioned above, are deadly, they only kill when the mosquitoes are exposed in a cage on the floor in the open. When the mosquitoes are artificially protected, the amount of pyrofume must be increased, and the increased amount of this agent will injure furniture, as does camphor-phenol.

In view of these studies, it appears that sulphur must still be relied upon as the most efficient insecticide, although it, too, is in a measure destructive. It is, however, important that studies of this character be continued, with the hope that a reliable and safe culicide will eventually be discovered.

INVESTIGATION INTO THE CAUSE OF THE PREVALENCE OF TYPHOID FEVER IN THE DISTRICT OF COLUMBIA.

In the annual report of 1906 (p. 221) reference is made to an investigation of the origin and prevalence of typhoid fever in the District of Columbia. This investigation was conducted by a board of officers appointed with the approval of the Secretary of the Treasury to cooperate with the health department of the District in making a study of the subject. The work soon proved to be of such complexity that it was found necessary to bring to the aid of the board a number of officers of the laboratory, four of whom were specially detailed to the laboratory by the Surgeon-General for this purpose. These studies included a sanitary survey of the Potomac watershed; an exhaustive epidemiological study of 866 cases of the disease occurring in the District of Columbia between June 1 and October 31, 1906; daily chemical and bacteriological examinations of the water supply; a special study of the pumps, wells, and springs of the District, and also of bottled waters sold in Washington; an inspection of the dairies and laboratory examinations of the milk supply; an inspection of the ice factories; chemical and bacteriological examinations of samples of ice, and the water from which the ice is made. The rôle of shellfish, fruits, and other raw food products in the propagation of the disease was also studied. Special attention was directed to the communicability of the disease from person to person by direct or indirect contact. The relation of privies and sewers to wells was investigated, and the question of flies and other insects as carriers of infection received attention. The bathing beach and public markets were inspected from time to time.

The full report of the board was rendered March 2, 1907, and published as Hygienic Laboratory Bulletin No. 35.

These studies indicate that typhoid fever in the District of Columbia is due to several causes. It was found that about 10 per cent of

the cases reported between June 1 and November 1, 1906, were attributable to the use of infected milk; about 15 per cent were imported, and about 6 per cent were traceable to contact.

The epidemiological studies showed that the number of cases was relatively higher in males. The morbidity rate was a trifle higher, and the mortality rate was much higher in the colored than in the white race.

The distribution of the cases was widespread throughout the city, and the sanitary conditions of residences did not bear any relation to the prevalence of the disease.

Three separate milk outbreaks occurred between June and November. The inspection of dairies revealed the presence of numerous unhygienic conditions. Examinations of 172 samples of milk purchased on the open market showed that only 29 of these contained less than 500,000 bacteria per centimeter. In other words, the great bulk of milk sold in Washington during the summer of 1906 was far below the standard adopted by such cities as Boston, New York and Rochester.

The bacteriological and chemical examinations of the waters of the 63 shallow wells in the District of Columbia revealed the fact that 31 of them were polluted with sewage and that 29 were suspicious. Upon these findings, the board recommended the closing of all shallow wells.

The bacteriological examinations of the Potomac water supply showed the presence of colon bacilli in 17.4 per cent of the samples examined during this investigation.

The presence of colon bacilli in a public water supply has been taken, in connection with other facts, as an indication of sewage pollution. When it is remembered, however, that this organism is very widespread in nature, too much stress must not be laid on its presence as an indication of the association of the typhoid bacillus.

The importance of the subject rendered it necessary to continue the investigation during the spring and summer of 1907. In these studies the board has been assisted by Passed Asst. Surg. George W. McCoy and Assistant Surgeons Stimson and Roberts.

Daily bacteriological examinations of the Potomac River water, both in its raw and filtered state, have been made since May 15. These examinations have included counts of the number of bacteria and the usual examinations for the colon bacillus.

The board has called attention to the importance of bacillus carriers in the transmission of the disease, and it is hoped that the investigations now in progress will throw light on the rôle this class of cases plays in the spread of typhoid fever in the District of Columbia and elsewhere. Effort has also been made to trace persons who had typhoid fever last year, in order to determine what percentage of typhoid cases become chronic bacillus carriers.

Some of the continued fever in the District of Columbia is undoubtedly para typhoid, class A and class B. With the view of determining just how much of this continued fever is typhoid, a series of blood cultures in sterilized ox bile are now being made.

The search for typhoid bacilli in milk, water, etc., has been prosecuted, but, as is well known, the isolation of this organism is an extremely difficult problem.

In connection with the general problem, experimental research has been carried on to determine whether domestic animals may be responsible for the transmission of the organism.

The investigations are now in progress, and the results will be published in a special report.

INVESTIGATION INTO THE CAUSE AND PREVALENCE OF TYPHOID FEVER IN CHARLOTTE, N. C.

A report was received June 25, 1906, that an outbreak of typhoid fever had occurred in Elizabeth Seminary, situated in the environs of Charlotte, N. C.

At the request of the junior Senator of North Carolina, and on request made for special reasons by the State board of health, an officer of the Service was, on July 2, 1906, directed to proceed to Charlotte for the purpose of cooperating with the State board of health in making an investigation of the outbreak.

A report of these studies, including bacteriological examinations of samples of water taken from various places, appeared in the Public Health Reports, August 17, 1906. From these studies it was evident that practically the entire water supply of the city was infected. In addition, the water used by certain dairies was found to contain colon bacilli.

The report contained a number of recommendations which it is believed had influence in the control of the epidemic.

INVESTIGATION INTO THE CAUSE AND PREVALENCE OF TYPHOID FEVER IN SAVANNAH, GA.

An outbreak of typhoid fever in Savannah, Ga., was reported during May, 1907, and, upon request of the city health officer, Passed Asst. Surg. John F. Anderson was detailed, May 28, 1907, to make an investigation into the origin and prevalence of the disease. He reported that the outbreak began during the first week of May, and that only 19 cases had occurred during the period from January 1, 1907, to May 1, 1907; of this number 2 were imported cases. The investigations of the health officer had shown that a large number of cases were occurring among persons receiving their milk supply from one of the large dairies in the city. This dairy did a wholesale as well as a retail business. In one of the depots supplied by this dairy a case of enteric fever had occurred February 7, and died March 5. The milk depot itself was located in a bakery, and the family in which the fatal case occurred lived above the bakery. The cans in which the milk had been delivered to this bakery had been returned to the dairy without any sterilization, and were subsequently used to deliver milk to other persons.

No unusual prevalence of the disease had occurred until about May 1. During the first two weeks of May 17 cases had been reported, 2 of them having been reported in the same house in which the fatal case of March 5 occurred. From May 16 to 31, 77 cases had been reported, a large percentage of which had occurred in persons who had used milk from the wholesale dairy. This dairy was, therefore, closed by the health officer on May 28.

Doctor Anderson presented the following table, which shows, in biweekly periods from January 1 to June 1, the number of cases of enteric fever reported and the milk supply of the same:

Semimonthly periods.	Dairy.																		
	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.	P.	Q.	R.	S.
1907.																			
Jan. 1–15	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Jan. 16–31	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Feb. 1–14	2	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....
Feb. 15–28	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mar. 1–15	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mar. 16–31	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	2	....	....	....
Apr. 1–15	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....
Apr. 16–30	2	1	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	1	....
May 1–15	9	....	....	1	....	....	1	....	....	1	....	....	....	....	....	....	....	4	1
May 16–31	54	....	1	1	....	....	4	....	....	....	1	2	1	2	1	....	5	5	1
Total	68	2	1	2	1	1	8	1	1	1	1	2	1	2	1	3	5	11	2

Total number of cases, 114.

Of the 114 cases shown in this table, 68 had used milk from the wholesale and retail dairy A. Deducting from the total of 114 cases those who had used condensed milk, those who had used no milk, and the imported cases and cases clearly attributed to contact, 73 per cent occurred among persons using the milk from dairy A.

Flies are numerous in Savannah, and are present practically the entire year. Immediately adjoining the milk depot alluded to above there were 4 cases of fever reported as typhoid, all of whom had used milk from dairy A; but the infection could possibly have been due to flies, as the distance from one house to another was only a few feet. Another possible means of the spread of infection from these first cases was the bread and other bakery products, because of the close proximity of the bakery mentioned above. Doctor Anderson visited the public water supply and sent samples of the water to the Hygienic Laboratory for examination. The bacteriological examinations showed only three colonies per cubic centimeter; no fermentation in 0.1, 1, or 10 c. c. of the water. No growth occurred in the fermentation tube planted with 0.1 c. c. The chemical examination made in the division of chemistry is as follows:

	Parts per million.
Total residue by evaporation	177.00
Fixed residue (mineral matter)	142.00
Volatile matter (loss on ignition)	35.00
Chlorine	7.5
Oxygen consumed	.42
Nitrogen as free ammonia	.0205
Nitrogen as albuminoid ammonia	0.0295
Nitrogen as nitrites	Trace.
Nitrogen as nitrates	Trace.

In addition, blood cultures were made in 22 cases of fever reported as enteric. They were planted in ox bile, and then immediately forwarded to the Hygienic Laboratory for examination. The recovery of the typhoid organism was reported from but two of the cultures, although the method used has, in the hands of others, given from 90 to 100 per cent positive results in the various stages of the disease.

As a result of his investigations, Doctor Anderson concluded that the outbreak of the disease was due to infection derived from dairy

A, and that this dairy had received its infection from the milk depot located in the bakery above mentioned. He also believed that flies had undoubtedly played some part in spreading the infection, especially where there had been cases in adjoining houses, or several cases in the same house. It was his opinion that the city water supply had had no influence in the outbreak of the disease, as the water was of exceptional purity.

A stringent milk ordinance was recommended, to include the inspection of dairies, the compulsory sterilization of milk containers before refilling, and the prohibition of the sale of milk from private residences.

The failure to isolate the typhoid bacillus in all but 2 cases, even though the most approved methods were used, again suggests the necessity of a careful study of the fevers in our Southern States. Many of the cases which were formerly called malaria have proved in reality to be typhoid fever.

There are other cases which cause much confusion among practitioners and health officials, and it is believed that they should receive careful scientific study by the Service because of their economic importance and influence on the public health of that region.

MILK SICKNESS.

This remarkable disease occurs in certain districts of the United States, notably in the mountainous portions of North Carolina and Tennessee, and has attracted much attention because of its fatal character and association with the affection in cattle known as the "trembles."

An outbreak of the disease was reported as having occurred near Bransford, Tenn., during April, 1907. At the request of the Member of Congress from that district and the State board of health of Tennessee, an officer of the Service was detailed May 25, 1907, with the approval of the Secretary of the Treasury, to make an investigation of the disease.

He arrived at Nashville, Tenn., May 29, 1907, and after conferring with the secretary of the State board of health, made a careful inquiry as to the prevalence of the disease in that section of the country. It was soon learned that the disease was of rare occurrence in Tennessee, and that no cases were then occurring. Passed Assistant Surgeon McCoy undertook, however, to determine the facts regarding the reported outbreak and the history of the prevalence of the disease in that section in the past. His report stated that the outbreak which led to the investigation occurred at a place in Macon County known as Love Hill. So far as could be learned the cow responsible for the outbreak had obtained access to what is locally known as "poison ground" about the 10th of April.

The milk from this cow was used regularly, and apparently without bad results, until April 25.

In addition to the five members of the family, there were two guests at breakfast on that day. Of the seven persons who ate breakfast on that date (April 25) all used milk and butter, with the exception of the mother of the family, and all who used the milk and butter became sick and died.

Milk from this cow was being fed regularly to a calf. The calf became sick with the disease known in animals as "trembles," and, after a few days' illness, recovered. The cow became sick soon after the calf, and in a few days died of "trembles." The cow showed no symptoms so long as she was milked regularly, but when she was neglected, owing to illness in the family, she became sick almost at once.

The human cases were not seen by a regular medical practitioner, but were treated by an irregular practitioner, known locally as a "poison doctor," or "milk doctor." When symptoms appeared in the first case the use of the milk was discontinued; they appeared in the case of the guest about ten days after he had taken breakfast at the house. The other cases sickened on different days; the exact dates could not be learned. In every case there was great prostration, abdominal distress, scaphoid abdomen, marked visible pulsation of the abdominal aorta, and obstinate constipation, which was replaced by an offensive diarrhea later in the disease. This diarrhea was attributed to the use of strong purgatives. There was no fever except probably in one case, but the history as regards fever is not trustworthy, as a thermometer was not used. Vomiting usually occurred in the last half of the illness. Throughout the illness a peculiar and characteristic odor of the breath was noticed. Death was preceded by unconsciousness, which lasted from a few hours to one day or longer.

The duration of the disease was from two days in one case to fourteen days in another, the average being about one week. The first case died on May 1, the last on May 11.

A specimen of the milk held responsible by the family for the outbreak of the sickness was forwarded to the Hygienic Laboratory for examination. No mineral poison was found. A considerable quantity was fed to a dog with negative results beyond symptoms of gastric irritation. At Bransford some of this milk was fed to a cat and to two chickens without ill result. As the milk was about 5 weeks old when fed to the animals, no conclusion is to be drawn from these negative results.

The investigations covered the counties of Trousdale, Macon, Sumner, Franklin, Putnam, White, Smith, and Warren, all in middle Tennessee. No history of the disease was to be obtained in Warren County, but the disease has prevailed more or less extensively in all of the other counties mentioned. The general features of the disease were found to be the same in all the localities visited. At the present time milk sickness is rare, an outbreak similar to the one just recorded being reported every year or two in some part of middle Tennessee. Formerly the disease was very common and caused many deaths. The settling of the country and consequent clearing of the forests has undoubtedly led to this great decrease in the number of cases. Just how this clearing of the forests has brought about this almost total obliteration of the disease is not known. Physicians who, thirty years ago, treated from 20 to 50 cases per year now see no cases for years at a time.

In the localities visited there are many areas regarded as "milk sick." In these places cattle are believed to acquire the disease known as "trembles." The milk from a cow with "trembles" is regarded as poisonous for man or the lower animals. Many of these

milk-sick areas are fenced to exclude stock. They vary in size from one-half an acre to 3,000 acres. They are usually shaded hollows or ravines having a stream running through; some of the areas, however, are on ridges remote from any water course.

The disease "trembles" occurs in spring and autumn; very rarely do cases occur in summer or winter. Cattle and sheep are very susceptible to this disease; horses and hogs are said to be affected occasionally. The disease "trembles" in animals is of more frequent occurrence than milk sickness in man, as comparatively few animals furnish milk for human consumption.

It is generally believed in milk-sick localities that animals get the disease from eating a plant. The plants growing in these areas, when fed to cattle outside of the areas, have failed to convey the disease. In some localities it is said that exposure while dew is on the grass is necessary in order that animals shall become sick. The flesh of animals dead of "trembles" is said to poison hogs or dogs that devour it.

Sweet milk and butter are regarded as equally dangerous, but buttermilk is said never to convey the disease.

Physicians familiar with the disease say there is no difficulty in making a diagnosis of milk sickness. They regard the absence of fever and chills, the constipation, and other abdominal symptoms, with the peculiar odor of the breath, as quite characteristic. Cases are reported of more than one attack, and the general impression is that one attack confers no immunity.

Milk sickness, though becoming rare, evidently persists from year to year in certain areas; its exact cause is unknown, and the mortality is high. It, therefore, deserves a careful study by modern methods.

Such a study would include the study of cases among humans or the placing of animals under the conditions necessary for the development of the disease. By this latter method something could in all probability be learned as to the causative agent, and possibly some means of prevention might be discovered.

MILK IN RELATION TO DISEASE.

Recent investigations into the origin and prevalence of typhoid fever have shown that milk is an important factor in the transmission of the disease. Scarlet fever, diphtheria, and tuberculosis are also known to be transmitted by this food. Epidemics of scarlet fever in Boston and Chicago during the past winter were attributed, in part, to milk, and it was determined that milk was the agent of transmission in 10 per cent of 866 cases of typhoid fever studied in the District of Columbia during the summer of 1906. In addition, it was shown that much of the milk sold in the District is too old, too warm, and dirty. The report of this investigation had an influence in creating a demand for improved sanitary conditions in the production and handling of milk, and the agitation for improvement along these lines is becoming general throughout the country.

A letter dated June 11, 1907, suggesting an investigation of the milk in the District from the farm to the consumer, was addressed to the President by Dr. G. Lloyd Magruder, and the same was referred to the Surgeon-General for his views as to whether such investigation

of the milk industry should be made. Following is the substance of this letter:

"In view of the agitation that is now going on in Europe and this country with reference to the question of the influence of milk upon infant mortality, as well as the causation of tuberculosis, typhoid and scarlet fevers, and diphtheria, I would respectfully suggest that you direct the Bureau of Public Health and Marine-Hospital Service to make a thorough investigation of the milk industry in the District of Columbia from the farm to the consumer. For this purpose the Bureau should be empowered to have the cooperation of other Departments of the Government, and proper credit should be given for such aid.

"Several foreign governments have recently ordered such investigations, and the reports are frequently quoted by writers in the United States upon these subjects. These writers have expressed many divergent views.

"The recent investigation conducted by the Bureau of Public Health and Marine-Hospital Service into the cause of the prevalence of typhoid fever in the District of Columbia, which report, including an examination of the milk supply in the city of Washington, has been printed and will be issued in a few days, and the work of the Department of Agriculture concerning the milk supply at the farms, have shown that many lives could have been saved and numerous cases of disease avoided by more careful attention to the health of the dairymen, as well as the cows, and the handling of the milk at the farm, in transportation, and distribution in the city.

"Much valuable information has been accumulated by both Departments, which can be consolidated and developed so as to be utilized as a standard not only for the District of Columbia but for the United States. This standard is very essential at the present time, and, with the facilities at the disposal of the United States Government, should have equal weight with that of any other government.

"It can be readily shown that much can be done to improve the milk supply without materially adding to the cost to the farmer and thus to the consumer.

"The report of such an investigation should be freely illustrated, that it may serve as an educational document."

In reply to this communication, the Surgeon-General stated, under date of June 15, 1907, in substance, as follows:

"I have the honor to acknowledge receipt, through Secretary Loeb, of the communication of Dr. G. Lloyd Magruder, in which he recommends that you direct the Bureau of Public Health and Marine-Hospital Service to make a thorough investigation of the milk industry of the District of Columbia from the farm to the consumer.

"Secretary Loeb informs me that you desire an opinion as to whether such an investigation should be made.

"Doctor Magruder properly emphasizes the importance of a pure milk supply and the attention which this subject is receiving throughout the country at the present time. The sanitary supervision of milk supplies formed one of the subjects of discussion at the Fifth Annual Conference of State and Territorial Health Officers with the Surgeon-General of the Public Health and Marine-Hospital Service, May 29, 1907. It was the sole subject of discussion in a conference of the various medical milk commissions of the United States,

held at Atlantic City, June 3, 1907, and also of a symposium in the section of hygiene and sanitary science of the American Medical Association during the same month.

"Impure milk is undoubtedly responsible for much of the intestinal morbidity and resulting mortality among infants. It is an excellent medium for the growth of bacteria, and undoubtedly acts as the agent of transmission of tuberculosis, diphtheria, scarlet fever, and typhoid fever.

"The relation of milk to the spread of the last-named disease received careful study during the summer of 1906 by a board of officers of the Public Health and Marine-Hospital Service appointed to conduct an investigation into the origin and prevalence of typhoid fever in the District of Columbia. It was determined that milk was the agent of transmission in 10 per cent of 866 cases studied. In addition, it was shown that the bulk of the milk sold in the District during that period was too old, too warm, and dirty. A report to this effect, which is contained in Hygienic Laboratory Bulletin No. 35, was made to the Commissioners of the District, and had an influence in the renewed demand for improved conditions. An advance copy of the above-mentioned publication is forwarded under separate cover.

"There are a number of other sanitary problems connected with the production of milk, which have an important bearing on the public health not alone of the District but of the country at large. It is believed that the investigations suggested by Doctor Magruder would form the basis of a report which would serve as a standard in the sanitary supervision of this important industry throughout the country.

"In this undertaking some cooperation of the bureaus of Animal Industry, Plant Industry, and Chemistry, of the Department of Agriculture, with the Public Health and Marine-Hospital Service would be of special value. The advantage of such cooperation was shown in the work of the recent milk conference called by the Commissioners of the District to consider the necessity and character of further legislation to improve the milk supply of this city. I am informed by Doctor Magruder, with whom I have conversed on the subject since the reference of his letter to me by Mr. Loeb, that he has discussed the matter with the honorable the Secretary of Agriculture, who expressed his interest and desire to cooperate with the Service in every manner possible in the prosecution of such an investigation.

"The Agricultural Department has already accumulated valuable information in regard to conditions at the dairy farms from which milk is supplied to the District, and this, together with such additional information as might be furnished, would contribute to the completeness of the investigation by this Bureau. Proper credit, as suggested by Doctor Magruder, should of course be given.

"The proposed investigation can properly be undertaken by this Service under the terms of the law establishing the Hygienic Laboratory (Mar. 3, 1901), the law declaring the function of the laboratory of the Service to be the investigation of infectious and contagious diseases and matters relating to the public health.

"I have also conferred with the honorable the Secretary of the Treasury with regard to the matter, and have his assent to this recommendation as to undertaking the investigation and the methods of conducting the same by cooperation of other bureaus.

"Under the above-mentioned law, the report of such an investigation could be published by the Treasury Department.

"I am therefore of the opinion that an investigation of the milk industry of the District of Columbia from the farm to the consumer should be made in the interest of the public health and on the lines above described."

The President and Secretary of the Treasury approved the plan as outlined for an investigation of the milk industry from the farm to the consumer as it relates to the public health. Letters were therefore addressed to the Chiefs of the Bureaus of Animal Industry and Chemistry requesting their cooperation and inviting suggestions.

This work, on behalf of the Service, is being conducted through the Division of Scientific Research and Sanitation, and it will be both practical and scientific in character. The investigations include studies in the Hygienic Laboratory of pasteurization; the thermal death point of tubercle, typhoid, and diphtheria bacilli in milk; the effects of temperature upon bacteria in milk; determination of standard methods for the bacteriological examination of milk; the presence of tubercle bacilli in market milk; the chemistry of milk, including standard chemical methods, thermal death point of bacteria in milk and ferments and coagulation in relation to acidity. The physiology, toxicology, and parasitology of this important food is also receiving attention.

ROCKY MOUNTAIN (SPOTTED) FEVER.

During the investigation of Rocky Mountain (spotted) fever, in the spring and summer of 1906, it was shown by experiment that the tick (*Dermacentor occidentalis*) is capable of conveying the disease from one guinea pig to another. The importance of the disease, both from a public health and economic standpoint, warranted further study, and an officer of the Service was detailed March 19, 1907, with the approval of the Secretary of the Treasury, to continue his investigation in Missoula, Montana.

Passed Assistant Surgeon King, in a report of this work, stated in part as follows: The appearance of spotted fever was influenced this year by the backward spring, the first case not occurring until April 14. From that date cases occurred at irregular intervals during my stay in Missoula. Altogether there were 11 cases, of which I saw all but 1. Five cases occurred in children from 22 months old to 7 years.

Of the 11 cases, 3 had recovered before my departure and 2 others were convalescent with every indication of ultimate recovery. During 1906 there occurred 12 cases with 2 recoveries. This difference is probably due to variability in the virulence of the disease rather than to new methods of treatment. The only departure from previous methods of treatment was the use of arsenic in 3 cases of which 2 recovered. This number is too limited to draw definite conclusions.

Either on account of the age of the patients, or opposition of the families, blood for inoculation into guinea pigs could be obtained from only 4 patients. Small quantities were secured from cases 2 and 3, and this lack of material greatly retarded the investigation until the latter part of May, when a good amount of blood was obtained from case 9. A sufficient quantity was obtained from case 8, but it did not prove infective to guinea pigs even in large doses.

No autopsies were obtained.

Attempts were made to cultivate the parasite, using various culture media, but without success. Neither did several cultivations in collodion sacs give definite results. However, the possibilities in these lines of work have not been exhausted, and further attempts will be made under more favorable conditions at the Hygienic Laboratory.

Very few of the experiments were completed in Missoula and the work was continued in the Hygienic Laboratory, where the infection is being kept alive by frequent transference through guinea pigs.

Incidental to these experiments, the transference by ticks was repeatedly confirmed. It was also noted that guinea pigs which had recovered from an attack of spotted fever were immune to the disease.

SANITATION OF THE JAMESTOWN EXPOSITION.

Upon request of the chairman of the board of governors of the Jamestown Exposition, Passed Asst. Surg. Rupert Blue was designated as sanitary director of the exposition December 21, 1906, and assigned to duty at the grounds January 1, 1907. Prior to that time he had made a number of sanitary inspections of the entire grounds and vicinity and made reports to the chairman of the board of governors regarding the drainage necessary for the extermination of mosquitoes, the regulation of stables for the extermination of house flies, the need of screening human habitations, the necessity of abundant water and bathing facilities, and the disposal of sewage, as well as other sanitary necessities.

In addition, a conference of health officers and others concerned was held at Norfolk November 16, 1906, to discuss all possible health contingencies in connection with the exposition. At this meeting the health officer of Norfolk read a paper in which he recommended that the board of control be asked to request the Norfolk County authorities to rigidly enforce compulsory vaccination in the district where the Jamestown Exposition grounds are located. He also suggested that a house of detention for suspected cases be provided awaiting the development of smallpox, and recommended the establishment of a hospital for minor contagious diseases, such as diphtheria, scarlet fever, etc. This paper was forwarded to the board of control of the exposition for their consideration and guidance.

In a report made July 27, 1907, the sanitary director summarized the work of his department at the exposition. In this report he referred to Pine Beach and stated that as early as September 29, 1906, he had made a report to the chairman of the board of governors calling attention to the necessity for the drainage of the area of sanitation, and to the importance of securing some measure of sanitary control over the town of Pine Beach. He interviewed the judge of the Norfolk County court and the county health officer, and emphasized the necessity of organizing a sanitary service to meet the conditions at Pine Beach, and also requested that he be appointed a county health officer without compensation. It was thought, however, that there was no county or State law in existence authorizing such an appointment. Later, after the appointment of the secretary of the board of county supervisors as governor of the division of transpor-

tation of the exposition, the matter was taken up with him and received favorable consideration.

On May 17, 1907, the county board of health held a meeting, passed a resolution appointing two sanitary inspectors for duty at Pine Beach, and prescribed sanitary rules and regulations. A copy of these rules reached the sanitary director June 1, 1907, and the sanitary inspectors appointed by this board were directed to report to him for instructions.

The garbage service for that community was established about this time and continued to improve. The method of disposal was by incineration in the open air some distance south of Pine Beach. The sanitary inspectors, not being on duty at night, failed to prevent the unauthorized dumping of refuse on vacant lots under cover of darkness. For this reason, the sanitary director requested the sheriff of Norfolk County to cooperate with the county police to prevent the nuisances.

The report stated that the growth of Pine Beach had been so rapid that no sanitary provision could be made for disposal of sewage, and as there was no law on the subject it was impossible to enforce sanitary regulations. Cesspools and open closets were used, except on One hundred and fourth and Ninety-ninth streets. The sewers on these streets were exposition outlets which the inhabitants of Pine Beach were allowed to use free of cost. Another sewer on Virginia avenue was owned by a sewer company incorporated for the purpose of sewering the town.

The majority of the people in this community depended on pumps and wells for their water supply. Realizing the danger of drinking water obtained in close proximity to cesspools and open closets, the residents were requested by the sanitary director to connect with the water mains of the Norfolk County Water Company which were laid on some of the streets. Many of them could not or would not pay for such connection and an attempt was made to enforce paragraph 2 of the regulations adopted May 17, 1907, which forbids any person maintaining any open closet or cesspool, or using, for the purpose of procuring drinking water, a driven well within 100 feet of such cesspool or closet. A number of offenders were haled before the justice, convictions secured, and fines imposed. These subjects were fully set forth in the sanitary director's reports to the governor of Virginia, the director-general of the exposition, and also in correspondence with the secretary of the board of supervisors of Norfolk County and the governor of the division of transportation of the exposition.

On January 11, 1907, the sanitary director requested the two county health officers and a member of the State board of health to meet at Pine Beach for the purpose of investigating the situation. This conference was held January 17, 1907, and a thorough inspection made of Pine Beach and vicinity. It was agreed that the situation was alarming and that radical measures should be adopted for its alleviation. Nothing having been accomplished by these conferences, a third meeting was called March 27, 1907, by the sanitary director, at which a representative of the Medical Department, United States Army, the medical director of the exposition, and the county and State health officers were present. Minutes of the meeting were

sent to the chairman of the board of governors, and to the governor of transportation, but without effect.

With reference to the exposition, the sanitary director stated that upon assuming his duties he had made a number of recommendations regarding sanitary matters to the governor of works, some of which were acted upon. Reports were also made to other members of the board at various times.

The plans of the sewer system for the exposition had been made and the mains installed a year prior to his assignment to duty as sanitary director. All the information obtainable on this subject was from a progress map showing the location of wells and mains, and all information gained in regard to plans and sites of buildings was secured by personal investigation. Insanitary conditions were frequently found with respect to the drainage of building sites, which might easily have been corrected. The careless method of construction and location of latrines used by the thousands of laborers on the grounds was particularly noticeable. Protests were made to contractors, the governor of works and his superintendents, and to the board of governors, calling attention to the danger to be apprehended from such careless and faulty disposal of sewage during the pre-exposition period.

The sanitary director, in his report, referred to the location of the 101 Ranch in a marshy area on the south side of the grounds, and stated that he was not consulted regarding the change from its original location to that place, although the superintendent of the grounds had assured him that no concession would be located in the marsh until it had been properly filled in. He was, however, consulted regarding the method of disposal of sewage of this ranch after the completion of the buildings, and opposed the plan to dispose of the sewage of this ranch through an open drain to a marsh south of the grounds. The superintendent of the department of water and sewers, without the sanction of the sanitary director, used vitrified clay piping in $2\frac{1}{2}$ foot lengths, jointed with cement. Owing to the low elevation of the locality, this piping had to be raised 8 feet above the ground to connect with the exposition mains—a very bad arrangement, as leakage necessarily resulted. It was stated that the attachés of this ranch consisted of about 350 persons, 85 of whom were Indians; that they were unaccustomed to the use of sanitary conveniences and made no use whatever of the toilet facilities provided for them. The sanitary director, in a letter to the board of governors, called attention to the danger of polluting the soil.

Soon after undertaking the sanitation of the grounds, he began the direction and supervision of a system of drainage for the prevention of mosquitoes, both on the exposition grounds and in the military camp, with eminently satisfactory results.

On April 9, 1907, the sanitary director addressed a letter to the board of governors regarding the drainage of military camps, the question of malarial infection, the sanitation of Pine Beach, the pollution of the exposition grounds by faulty latrines, the desirability of sewer connections, and the necessity of an ample supply of water for the camps.

He advised the use of McCall's incinerators for the disposal of sewage in camps of the State militia and semimilitary organizations;

but as these were considered too expensive by the exposition authorities, an alternative plan had to be adopted, consisting of latrines with covered metal troughs, having water and sewer connections, the water being piped from the Norfolk city mains. The sanitary director stated in his report that imperfect work was done and some soil pollution resulted from leakage. The Fifth Georgia Regiment had occupied this camp for a few days in the early part of June, and during their stay, without having consulted the sanitary department, dug and made use of shallow pits for the disposal of human excrement. Immediately upon the discovery of this fact, a very strong protest was made in writing to the officer commanding the regiment.

During the encampment of other military organizations a sanitary surveillance was maintained by the sanitary director, but great difficulty was experienced in preventing soil pollution on the part of the untrained militiamen. He also protested to the street-car companies regarding the absence of sanitary arrangements for the convenience of the laborers employed in constructing the street-railway lines to the exposition.

The water supply of the exposition was piped into the grounds a distance of 8 miles in the mains of the city of Norfolk and received in an open reservoir in the south side of the grounds. Bacteriological analysis of this water made in the laboratory of the United States Army at Washington in April showed that it was safe.

During the pre-exposition period a number of driven wells were maintained on the grounds for the purposes of supplying the boilers, mixing building materials, and watering the draft animals. After the water mains were in operation, to safeguard the public health the sanitary director advised the governor of works to close all wells and springs on the grounds; which was done in part. He discovered, however, that the Inside Inn still provided its guests with well water, and as a result had the connections with the wells broken and the city water turned on in the pipes, after having taken such other measures as seemed necessary to destroy any possible infection. Samples of the water taken from the exposition grounds were sent to the hygienic laboratory of the Service at Washington, for analysis.

It was desired to maintain strict surveillance of the foods offered to the patrons of the hotels and restaurants on the exposition grounds. Regular inspections of the refrigerators containing meats, fish, milk, etc., were made by the sanitary department. As a result of these inspections and the inspection of dairies supplying milk to the exposition, the products of three dealers in milk were excluded from the grounds.

Several cases of ptomaine poisoning occurred among the patrons of restaurants, and, as they were attributed to the lack of facilities for refrigeration of food stuffs provided on the grounds, the sanitary director in a letter to the board of governors called attention to this danger and suggested that refrigerator cars be obtained from the railroads and kept on the tracks in the vicinity of the grounds for the convenience of the concessionaires. This was done, and no further cases were reported. In order to prevent contamination of food by flies, paragraphs 3 and 7, Sanitary Regulations of the Exposition, were brought to the notice of all restaurant keepers, and they were forced to screen their premises.

A garbage crematory was not completed at the opening of the exposition, and a temporary expedient had to be adopted. This consisted in conveying the garbage in patent metal cars to the end of the pier and dumping it into the deep waters of Willoughby Bay. Although a garbage crematory was completed May 20, 1907, it was not put in operation until July 20, 1907.

The sanitary supervision of a national exposition involves great responsibility, and the sanitary force should be adequate. In this instance it was entirely inadequate. The inspectors, two in number, and one foreman of the ditching squad were untrained men. The inspectors furnished by the county board of health for duty in Pine Beach were also inexperienced. Notwithstanding the lack of facilities, the sanitary director took cognizance of all the factors for the preservation of the health of employees and visitors to the exposition. He repeatedly called the attention of the board of governors to dangers which might arise from soil pollution, contaminated water and food, flies, and mosquitoes. It is evident from his reports that the sanitation of the exposition grounds was accomplished under difficulties. The measures adopted, however, were successful. Mosquitoes, which in former years had been very prevalent, were practically eliminated.

The sanitary condition of the grounds remained excellent, and while conditions in adjacent towns were bad, even here marked improvement was observed as a result of the measures adopted. A few cases of typhoid fever were reported among the employees attached to the exposition in June and during the first days of July, but the infection occurred outside the grounds, and subsequent events showed that there was no cause for alarm, as the health of those attached to the exposition remained good.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE EXHIBIT AT THE JAMESTOWN EXPOSITION.

In planning this exhibit it was desired to represent as completely as possible the multiple duties with which the Public Health and Marine-Hospital Service is charged by law; also the progress being made in scientific medicine and public health administration.

The surgical section consisted of a model operating room, having in the center wax figures showing a surgical operation in full progress. Around the sides of the room containing the section were placed steam sterilizers for dressings, water sterilizers, irrigating stands, an instrument case containing a full surgical armamentarium, glass topped bottles, glass basins, and all the other appurtenances of a fully equipped operating room.

The laboratory section contained various apparatus constantly used in the hygienic laboratory in the solution of public health problems. This included laboratory glassware, sterilizers, thermostats, embedding apparatus, microscopes, microphotographic apparatus, etc.

Petri dishes were shown containing cultures of bacteria isolated from contaminated vaccine virus. For the purpose of further demonstrating the operations of the law of July 1, 1902, regulating the manufacture, barter, and sale of vaccines, serums, and toxins, and the method of its administration, a collection of the various vaccines and serums manufactured under this law was shown.

A traveling laboratory was included in this section, two such outfits being constantly held in readiness by the Service for field work or for use in the event of outbreaks of epidemic diseases in various parts of the country.

In addition, a very complete helminthological collection was included in this section. This latter collection was of great value, in view of the increasing attention given to parasites in relation to diseases of man. A macrograph was used to enlarge microphotographs of various pathogenic bacteria, animal parasites, and other specimens related to disease.

A hospital section comprised a record room and model ward. The record room contained various Service publications, a hospital library, clinical histories with their method of filing, and filing cases for microscopic slides.

The model ward was equipped with modern hospital beds, invalid chairs, bedside stands, a wheeled stretcher, litters, a portable bath tub and stretcher, medicine cases, a case of surgical dressings, etc.

The tuberculosis exhibit consisted of a model of the Marine Hospital Sanatorium located at Fort Stanton, N. Mex. This, together with views of the buildings and surrounding country, was shown to emphasize the advantage of light and air in the treatment of tuberculosis.

The quarantine section included a model of a detention camp intended for use in time of epidemic; also models of the quarantine stations at Delaware Breakwater and Reedy Island, and a model of disinfecting machinery used at the latter station.

The X-ray section was installed in a room 10 by 15 constructed for the purpose. Two modern coils were shown, including X-ray tubes and fluoroscopes; also a high frequency apparatus and the various accessories which naturally form a part of such an exhibit. In addition, numerous photographs were shown to illustrate the uses to which this apparatus is put at the different hospitals of the Service.

The exhibit as a whole excited much favorable comment, and is believed to have fulfilled the purpose for which it was prepared.

An officer of the Service was assigned to duty in connection with the exhibit, and continued demonstrating the scientific features of the different sections until September 10. He reported that, as a whole, the exhibit was appreciated by the general public.

HYGIENIC LABORATORY.

The report of the director of the hygienic laboratory is summarized as follows:

In view of the fact that the laboratory was established by law for the "investigation of infectious and contagious diseases and matters pertaining to the public health," more or less time was devoted to the following subjects during the fiscal year covered by this report: Typhoid fever, tuberculosis, yellow fever, spotted fever, milk sickness, diphtheria, tetanus, and other communicable diseases; immunity, vaccines, antitoxins, water, milk, germicides, and the adulteration of drugs; the functions of certain glands of the body, various animal parasites, chemical investigations of the blood in health and disease, and other subjects dealing with the sanitary sciences.

These researches were of widely varied nature, some of them pathological, some bacteriological, others chemical or pharmacological, some dealing with animal parasites, microbiology or toxicology. From this recital it appears that the laboratory corps is prepared to attack public health problems from many standpoints.

There are many public health problems demanding the assistance of laboratory investigations and a still greater number of unsolved problems in the domain of the sanitary sciences which can only be solved by research work of a laboratory character. There is an embarrassment of riches, therefore, so far as problems are concerned the solution of which would have a favorable influence upon public health. The amount of work and the scope of investigations dealt with in the hygienic laboratory are only limited by the ways and means available. Active research work into the great sanitary problems, such as standards of potable waters, the purification of surface waters, streams pollution, sewage, disposal, milk, tuberculosis, pneumonia, typhoid fever, malaria, cancer, and the large category of communicable diseases should receive constant attention from the laboratory standpoint until they are solved.

Buildings and grounds.—In the last general appropriation bill Congress included an item of $75,000 for an additional building and improvements to the grounds. This will provide a much needed addition to the present structure, which is very much overcrowded. The Supervising Architect has prepared plans and specifications, and secured bids for erection of the additional building.

Personnel.—During the past fiscal year two officers of the Service, Passed Asst. Surg. W. W. King and Passed Asst. Surg. G. W. McCoy, were assigned to the laboratory for instruction in pathology and bacteriology. The former soon devoted his attention to the question of Rocky Mountain spotted fever, and the latter assisted with the general work of the division of pathology and bacteriology. Asst. Surg. Norman Roberts was detailed to the division of chemistry for instruction; after satisfactorily completing the course in quantitative and qualitative analysis he at once began the study of original problems, the result of which will shortly be published. Passed Asst. Surg. Joseph Goldberger has been continued in the division of zoology, where he is carrying on special investigations. An officer of the Service should be assigned to the division of pharmacology, not only for the reason that this division is very much in need of such assistance, but for the benefit the Service will derive from such a course. Passed Asst. Surg. L. L. Lumsden was assigned to the laboratory as a member of the typhoid fever board and has largely devoted his time to epidemiological studies upon that disease. Passed Asst. Surg. Baylis H. Earle was also temporarily assigned to the laboratory during August and September for the purpose of assisting in the studies upon typhoid fever. Asst. Surg. A. M. Stimson continued his work in the division of pathology and bacteriology, where he discovered an interesting *Spirochete* in the kidney from a case of yellow fever; he also did the bacteriological analyses of water for the typhoid fever board.

Journal club.—The journal club, which now meets biweekly for the purpose of reviewing current public health literature and discussing work, has continued its sessions with few interruptions.

Special laboratories.—As Congress has provided for a laboratory and hospital for special work upon the cause, means of transmission, and treatment of leprosy at Molokai, T. H., the question of establishing other Service laboratories for special purposes arises. The tuberculosis sanatorium at Fort Stanton offers special facilities for work upon this problem, and it is earnestly recommended that a properly equipped laboratory be provided, and an officer of experience and zeal, be detailed for this purpose.

Branch laboratories should also exist on the Gulf coast, especially at New Orleans, for the study of tropical diseases in this country, such as malaria, yellow fever, etc.

Hookworm disease.—It is now well known that hookworm infection is much more prevalent throughout the southeastern portion of the United States than was formerly suspected. It, therefore, appears important that public health work of a similar nature to that done in Porto Rico should be inaugurated in the infected belt, particularly in Florida, Mississippi, Alabama, Georgia, South Carolina, and surrounding territory. Both the public and the medical profession are in need of instruction regarding the prevention and cure of this important disease which causes so much anemia and even death.

The methods for preventing the spread of the infection and a satisfactory cure are within the entire control of medical science, and it would be the part of good public health work to actively prosecute a campaign looking to the eradication of this disease.

Similar work upon the eradication of malaria and dengue and on the destruction of *Stegomyia calopus* in infectible territories would be fruitful of public health good.

Examination of drugs and chemicals.—Samples of drugs and chemicals used in the various hospital and quarantine stations of the Service are first submitted by the purveyor to the hygienic laboratory, where they are examined in the division of pharmacology or the division of chemistry. Some of these medicines, such as ergot, preparations of the suprarenal gland, etc., are tested by pharmacological methods upon animals; others are first assayed and then tested upon animals to determine their physiological strength; all are tested chemically for impurities or adulteration. When this work was first begun a large percentage of the drugs submitted by the dealers were rejected, as they did not comply with the pharmacopœial standards. Now that it is known that this control is maintained over the drugs used by the Service, a much better quality is submitted, so that rejections are now comparatively few.

Relations to the pharmacopœia.—The work upon drugs and chemicals has brought the Service into closer touch with the pharmacopœia. The chief of the division of pharmacology of the hygienic laboratory is now a member of the committee of revision for that important legal standard work. The unit for standardizing the strength of diphtheria antitoxin made by the Public Health and Marine-Hospital Service was recognized in the Eighth Decennial Revision, and it is anticipated to present the unit for standardizing tetanus antitoxin for admission to the next decennial revision.

Much work is being done upon standardizing methods for measuring the physiological strength of organo-therapeutic preparations, such as the products of the suprarenal gland, the thyroid gland, etc., and it is believed that this work will do much to establish uniformity

in the strength of this list of drugs rapidly growing in importance and usefulness.

The patent and proprietary medicine evil.—The chief of the division of pharmacology is a member of the council on chemistry and pharmacy of the American Medical Association. The important work done by this council and the association in correcting some of the evils of patent and proprietary medicines is generally recognized. Some flagrant frauds have been exposed, and the profession and the public have been informed that some of the medicines widely advertised as harmless contained dangerous substances, while others claiming powerful action consist of inert and harmless mixtures.

Sanitary analyses of water.—Many samples of water have been examined bacteriologically and chemically from a public health standpoint. These samples have mostly been collected in the District of Columbia. It would seem desirable to extend this feature of the laboratory work to include the sanitary analysis of any samples of water affecting the public health of more than one State. It can never be expected that laboratories will be established in every small community throughout the country, and it would, therefore, seem to be plainly a public health function of the central Government to study and guard the purity of interstate streams, aided by laboratory analyses.

Stream pollution and sewage disposal.—These subjects are growing in importance in proportion to the increase in population. Many questions concerning the pollution of streams and the self-purification of surface waters await elucidation. A satisfactory method for the disposal of sewage is a desideratum and it is urgently recommended that the entire energies of competent and enthusiastic investigators be concentrated upon these practical problems of such great public health importance.

Cooperation with the Naval Medical School.—The director of the laboratory and the chief of the division of zoology gave two courses of lectures to the naval medical students, the former upon quarantine, antitoxin, vaccine virus, smallpox, etc., and the latter upon medical zoology.

Paralysis following diphtheria.—Paralysis is a frequent and serious complication of diphtheria. Research work upon this problem was carried on in the division of pathology and bacteriology. It was shown that antitoxin has no influence in preventing the development of postdiphtheritic paralysis if injected after the paralysis has appeared. The fact that 1 unit of antitoxin prevents paralysis and saves life when administered timely, whereas 4,000 units totally fails when delayed forty-eight hours emphasizes the importance of using this sovereign remedy early. The work upon this subject was published in detail in Hygienic Laboratory Bulletin No. 38.

Immunity.—The question of immunity to the communicable diseases is such an important one from a public health standpoint that it has continuously engaged the attention of workers in the laboratory since 1894, when diphtheria antitoxin was discovered. During the last two years exhaustive studies were made upon the question of hypersusceptibility or anaphylaxis. This phenomenon has great significance in general pathology, and it is believed that it is either an essential element or one of the stages in the production of active immunity.

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During the fiscal year covered by this report guinea pigs were rendered hypersusceptible to an injection of the proteid extract from bacterial cells. One injection of these bacterial proteids places the animal in a condition known as anaphylaxis, in contradistinction to prophylaxis. A second injection of the same bacterial proteid extract causes severe symptoms of a characteristic nature. This reaction in certain instances is followed by an immunity to the corresponding infection. In this way guinea pigs were rendered resistant to the infection of typhoid and colon bacilli. This work is being prosecuted actively with other micro-organisms with the promise of useful results.

Chemical researches.—The underlying, essential cause of all disease conditions will find their ultimate explanation in chemical alterations. Chemical researches are, therefore, of the greatest importance in throwing light upon the nature, cause, and cure of disease. The division of chemistry, which has been in operation less than two years, is fully equipped and organized to carry on researches of this nature. The report of the chief of the division of chemistry indicates that important problems have received attention and numerous advances have been made.

Germicides.—A number of germicides were investigated during the year. This subject has been of perennial interest to the laboratory, and it is intended in the near future to carry on investigations of a large number of proprietary preparations on the market in order to determine their true value. There are probably some proprietary preparations, widely advertised, of doubtful or no efficiency, and it would be distinctly in line with public health work to expose such dangerous frauds.

Laboratory bulletins.—Eight bulletins were issued during the fiscal year, as follows:

No. 30: I. Maternal transmission of immunity to diphtheria toxine. II. Maternal transmission of immunity to diphtheria toxine and hypersusceptibility in the same animal.

This bulletin contains work upon the maternal transmission of immunity to diphtheria toxine and also on hypersusceptibility to horse serum by the female guinea pig to her offspring. It was shown that about 50 per cent of the offspring of female guinea pigs treated with toxine-antitoxin mixture transmitted an immunity to diphtheria toxine to their immediate offspring. An interesting fact was brought out, in that no female guinea pig treated with toxine alone transmitted an immunity to her young. The second article in this bulletin shows that a female guinea pig which had been treated with toxine-antitoxin mixture transmitted to her immediate offspring immunity to the diphtheria toxine and hypersusceptibility to horse serum. These results are of practical importance in the testing of diphtheria antitoxin and toxine. On account of the hypersusceptibility to the injection of horse serum, guinea pigs derived from such a source, when used to determine the presence of bacterial or toxic impurities, may die not from the presence of such impurities but on account of a hypersusceptibility to horse serum transmitted from the mother.

No. 31: Variations in the peroxidase activity of the blood in health and disease.

This bulletin contains the results of an investigation on the peroxidase activity of the blood under different conditions of health and disease. It has been found that in alkaline solution, under the influence of very minute quantities of blood, phenolphthalin can be oxidized to phenolphthalein by hydrogen peroxide, and that this oxidation can be measured colorimetrically by comparison with standard solutions of phenolphthalein in alkali. It has been found that in various diseased conditions the blood shows a considerable falling off in peroxidase activity or oxygen-carrying power and that in the majority of cases at least the peroxidase activity of blood is proportional to the amount of hæmoglobin present. In 29 out of the 47 cases investigated the numerical agreement between the oxidizing power of blood and the percentage of hæmoglobin is almost exact and in the remaining cases it was found to be sufficiently close to indicate a general agreement and correlation between oxidizing power and hæmoglobin content.

No. 32: A stomach lesion in guinea pigs caused by diphtheria toxine and its bearing upon experimental gastric ulcer.

Guinea pigs dying acutely from infections of diphtheria toxine frequently show a lesion in the stomach, which is described for the first time in this bulletin. This lesion has assumed practical importance in view of the light it may throw upon experimental gastric ulcer. So far as known a similar condition of the stomach in human diphtheria has not been observed. Of 2,882 guinea pigs of which records were kept the lesion was found in 1,897, or 66 per cent. The ulcers are especially interesting in view of the fact that they show an entire absence of cellular infiltration, indicating autolysis or peptic digestion of the mucosa.

No. 33: Studies upon experimental alcoholism.

Experiments were performed to determine if physiological changes could be detected in animals to which very moderate amounts of alcohol had been administered. The results showed that this is the case; such animals were very susceptible to certain poisons. These experiments tend to show that certain physiological processes in moderate drinkers are different from those in abstainers; under some conditions these changes may lead to harm. The experiments also show that although alcohol is a food, it is not strictly analogous to sugar with which it is often compared.

No. 34: I. *Agamofilaria georgiana* n. sp., an apparently new roundworm parasite from the ankle of a negress. II. The zoological characters of the roundworm genus *Filaria* Mueller, 1787. III. Three new American cases of infection of man with horsehair worms (species *Paragordius varius*), with summary of all cases reported to date.

Part I of this bulletin gives the systematic position together with a detailed description of the external and internal anatomical characters with drawings of the apparently new roundworm parasite, *Agamofilaria georgiana* n. sp., reported for Georgia.

Part II endeavors to aid in the clearing up of the genus *Filaria* Mueller, 1787, so little understood zoologically despite the enormous amount of literature which has appeared upon the subject. It gives the systematic position of the genus and synonymy of the species discussed.

Part III gives a summary of 15 cases of infection of the human host with the horsehair worm, *Paragordius varius*. It contains a key to the orders of nemathelminthes, a key to the genera of the family *Gordiidæ*, the specific diagnosis of *Paragordius varius*, and a key to the North American species of *Gordiidæ*.

No. 35: Report on the origin and prevalence of typhoid fever in the District of Columbia. (Including contributed articles.)

These investigations have included a sanitary survey of the Potomac watershed; an exhaustive epidemiological study of the 866 cases of typhoid fever occurring in the District of Columbia between June 1 and October 31, 1906; daily chemical and bacteriological examinations of the water supply; an inspection of the ice factories; chemical and bacteriological examinations of a number of samples of ice, as well as the water from which the ice is made; a special study of the pumps, wells, and springs in the District, and also of bottled waters sold in Washington; an inspection of the dairies and laboratory examinations of the milk supply, and the making of blood cultures, diazo and Widal reactions for practicing physicians in the District. The question of shellfish, salads, fruits, and other raw food products in relation to the disease was also studied. Further, special attention was directed to the communicability of the disease from person to person, by direct or indirect contact. The relation of privies and sewers to wells has also been investigated, and the question of flies and other insects as carriers of infection received attention. The bathing beach and public markets were inspected from time to time. Finally, in the division of zoology many specimens of feces were examined in order to determine the possible relation of animal parasites to the disease.

No. 36: Further studies upon hypersusceptibility and immunity.

This is a continuation of the work recorded in Bulletin No. 29 upon "The cause of sudden death following the injection of horse serum." In the present bulletin the essential nature of hypersusceptibility is considered and the phenomenon studied from several new standpoints. Probably the most important point with which the new work deals is the hypersusceptibility produced by the proteid extract from the bacterial cell followed by immunity to corresponding infection.

No. 37: Index-Catalogue of Medical and Veterinary Zoology. Subject: Trematoda and Trematode Diseases.

This bulletin is the first of a series to be published by the laboratory covering the subject-matter of medical and veterinary zoology. Bulletins on nematoda and nematode diseases, cestoda and cestode diseases, etc., will follow. The index is a compilation from the combined card catalogues of the Zoological Laboratory, Bureau of Animal Industry, Department of Agriculture, and the Division of Zoology of this Laboratory. The author's catalogue covering the field of medical and veterinary zoology is now being published as Bulletin No. 39, Bureau of Animal Industry, Department of Agriculture. This bulletin may therefore be considered as a companion to that portion of said Bulletin No. 39 referring to trematoda and trematode diseases.

No. 38: The influence of antitoxin upon postdiphtheritic paralysis.

About one-fourth of all the cases of diphtheria that recover are followed by paralysis. The relation of antitoxin to postdiphtheritic paralysis is studied upon the guinea pig. Postdiphtheritic paralysis in the guinea pig is an almost exact counterpart of the same sequel in

man, and it is shown that, while antitoxin can control or modify paralysis and save life when given early, it is entirely inefficacious when its administration is delayed too long.

In addition to the subjects already alluded to the following is a summary of the more important work that has been carried on in the various divisions of the laboratory during the past fiscal year:

DIVISION OF PATHOLOGY AND BACTERIOLOGY.

Vaccine virus.—The examinations of vaccine virus bought upon the open market and made by the various licensed manufacturers under the act approved July 1, 1902, were continued during the year. On account of the lack of assistance in the division of pathology and bacteriology these examinations were not made as frequently as was desired. The number of contaminating organisms in pure culture isolated from vaccine virus has been added to the collection, and as soon as time and assistance permit it is hoped to make a complete study and classification of the various bacteria found in vaccine virus.

It would be desirable for at least one officer to concentrate his entire time and attention upon the subject of vaccine virus, in order to devise better methods of propagation and accurate methods of supplying a pure, safe, and potent product. The etiology of vaccinia and smallpox still awaits elucidation.

It is fully recognized that the present method of controlling the purity and potency of vaccine virus, while it has given very good results so far, is not entirely satisfactory. The propagation of vaccine virus is encompassed with difficulties and demands the attention of an experienced and conscientious vaccinator. More frequent inspections and controlled laboratory analyses of every lot of vaccine virus sold would be desirable. Emphasis is given to this subject on account of its great public health importance.

Examination of antidiphtheric serum.—A large number of samples of antidiphtheric serum purchased upon the open market were examined during the year, but only four were found below strength; reports in regard to these were made to the bureau. Two samples submitted by a municipal board of health and examined by authority of the Surgeon-General were found to be below the strength claimed for them. The infrequency of finding samples of serum below their claimed unit strength is especially gratifying, and shows very clearly the good effects of the Federal control of this great remedy. In order to have a more complete control over all antidiphtheric serum sold in interstate commerce it is believed that the manufacturers should be required to submit to the laboratory a sample of each lot prepared for sale.

Examination of other therapeutic serums.—A number of other serums used for therapeutic purposes were examined in the laboratory. Some samples obtained from a foreign manufacturer desiring to be licensed were found to contaminated. Samples submitted by the same manufacturer at a late date were found to contain an excessive amount of preservative. A report of these facts was made to the bureau.

Standard unit for diphtheria antitoxin.—The standard unit for diphtheria antitoxin was prepared and sent out at bimonthly periods. This standard serum is now over 2 years old and has maintained its

strength unimpaired. A reserve supply of this dried antitoxic serum, carefully preserved in vacuum apparatuses, was placed in a local cold storage plant, so that in case of fire or other accident to the stock on hand in the laboratory the work could be continued without interruption.

Standard unit for tetanus antitoxin.—Since the last annual report the standard unit for tetanus antitoxin has been prepared. Work upon this subject has occupied attention for several years. The unit is a dried antitetanic serum of a high grade and preserved in vacuum apparatuses under the influence of pentaphosphoric acid, in all respects similar to the standard unit for measuring the strength of diphtheria antitoxin.

The tetanus unit is the neutralizing power possessed by an arbitrary quantity of this standard serum. At present the unit has the power of neutralizing just 100 minimal lethal doses of a standard toxin which has been prepared in the division of pathology and bacteriology. This toxin, precipitated with ammonium sulphate, dried and ground to an impalpable powder, is sufficiently strong to kill a half-grown guinea pig in doses of 0.000006 gram. This test dose has been found to be sufficiently stable for practical purposes. It has not deteriorated in the fifteen months during which it has been under observation. The toxin and not the antitoxin is given to the licensed manufacturers and others interested for the purposes of standardization. This is a great saving of time and animals.

Based largely upon this work, the committee on the standardization of serums of the Society of American Bacteriologists made the following report, which was unanimously adopted:

That tetanus antitoxin be standardized by the tetanus toxin furnished by the Public Health and Marine-Hospital Service. The unit is ten times the least amount of serum necessary to save the life of a 350-gram guinea pig for ninety-six hours against the official test dose of the standard toxin. The test dose is 100 minimal lethal doses of a precipitated toxin preserved under special conditions at the hygenic laboratory of the Public Health and Marine-Hospital Service. It was decided that the minimal immunizing dose for a case of possible infection through a wound should be 3,000 of such units. It was decided that after April 1 the new unit should be adopted by all producers of tetanus antitoxin.

The necessity for establishing an American unit to provide uniformity for this important prophylactic is evident from the following statement:

Manufacturer.	Units claimed per c.c.	Units per c.c. according to the American standard.
A	0.50	434
A	.75	769
B	700.00	166
C	100,000.00	77
D	5.00	333
E	6,000,000.00	90
F	.01	2

The great discrepancy in the old system of measurement and the weakness of some of the serums upon the market is evident from the above figures.

A bulletin based upon the work done in preparing this standard serum and toxin is now in preparation by the director and assistant director and will soon be ready for publication.

Antiseptics and disinfectants.—During the year a few samples of disinfectants were received for examination and reports made accordingly.

Work upon the germicidal and antiseptic value of formalin has been done in the fiscal year just ended by the assistant director, and the manuscript is now ready to be submitted for publication. The results show that 5 per cent formalin is an efficient method for the disinfection of feces.

The division of chemistry, cooperating with the division of pathology and bacteriology, continued experiments during the winter and early summer upon the disinfecting property of sulphur gas. The determinations of the amount of SO_2 and SO_3 were made by the division of chemistry, and the bacteriological part of the work was done in the division of pathology and bacteriology. This manuscript will be ready for publication during the coming fiscal year.

Examination of water.—Many specimens of river, well, and spring water were examined in the division of pathology and bacteriology in connection with the investigation of the prevalence of typhoid fever in the District of Columbia. The results have been embodied in the report of the board on typhoid fever in the District of Columbia.

Examination of blood cultures for the typhoid bacillus.—The laboratory prepared bottles containing sterilized ox bile for distribution to the various stations of the Service for quick diagnosis of typhoid fever. Upon the authority of the bureau these were forwarded to the stations, and a number of them have been inoculated and returned to the laboratory for determination. This method seems to be a most satisfactory one for the bacteriological diagnosis of typhoid fever.

Studies upon hypersusceptibility and immunity.—During the year the director and assistant director continued studies upon hypersusceptibility and its relation to immunity. They found that animals in which the phenomenon of anaphylaxis had been induced by a second injection of bacterial proteids were immunized in corresponding cases of infection with typhoid and colon bacilli. This work, especially in relation to tuberculosis, plague, and typhoid fever, is now being continued.

Experimental work was done by the director and assistant director upon the influence of antitoxin upon postdiphtheritic paralysis. The results were prepared and have been submitted for publication. They show that antitoxin has practically no influence upon the prevention of paralysis unless given early, and in sufficient amount, in the attack of diphtheria.

Opsonic index.—Some work has been done demonstrating to the student officers in the division of pathology and bacteriology the method of determining the opsonic index.

Tuberculosis examinations.—During the fiscal year 44 employees of the various departments in Washington were examined for tuberculosis. In the case of 9 the tubercle bacillus was demonstrated in their sputum.

Instruction of officers.—The need of the detail of regular officers in this division for instruction and research is recognized, and if the

exigencies of the other work of the Service permit it is hoped that early in the ensuing year such officers may be detailed for the course of instructions, so that their services can be had for carrying on the research work of this division.

Examination of pathological specimens.—A large number of specimens of organs, tumors, and disease processes were submitted by various officers to the laboratory for pathological diagnosis. In each instance the specimen was sectioned and studied under the microscope, and a report, including a stained specimen, submitted.

The laboratory is dependent upon outside sources for its pathological material, as it has no direct connection with any hospital in the District, and is therefore always ready to receive such specimens from officers of the Service. These specimens are particularly useful to student officers taking the course in pathology and bacteriology.

DIVISION OF ZOOLOGY.

Parasites and typhoid fever.—Advantage was taken of the outbreak of typhoid fever in Washington during the summer of 1906 to test Guiart's theory relative to the action of intestinal worms, particularly whipworms, as inoculating agents in typhoid. According to the hypothesis, whipworms inoculate typhoid fever by wounding the mucosa of the intestine and thus forming points of entry, into the circulation, for the typhoid bacilli.

Two thousand microscopic examinations were made, covering 200 typhoid patients, but as 92.5 per cent of the patients were found free from intestinal worms the results can not be considered as supporting Guiart's views.

New species of parasites for man in the United States.—A new species of parasitic roundworm (*Agamofilaria georgiana*) has been found and described for man in Georgia. This worm lives under the skin. Its anatomy has been studied, but nothing is known of its life history.

A species of larval tapeworm (*Sparganum proliferum*) was described by Ijima (1905) in Japan as infesting the subcutaneous tissue of man and producing rather a serious condition. A parasite, either identical with or very closely allied to the Japanese form, has now been recognized by the division as occurring in man in Florida. The peculiar proliferation of the larva, as described for the Japanese form, has been confirmed in connection with the parasite in Florida, but the source of infection is not yet determined.

Horsehair worms in man.—Three new North American cases of infection with horsehair worms have been recorded by the division, and in connection with these all previously recorded cases have been compiled. The conclusion is drawn that the popular dread of these worms is very greatly exaggerated.

Fieldwork on hookworm disease.—A field trip has been undertaken in order to study certain economic and public health phases of hookworm disease. Important practical results are already in view, but their announcement in this report would be premature. It is expected that the report will be completed before the end of the next fiscal year.

Determination of specimens.—The division has continued to make zoological determinations of animal parasites for physicians, boards of health, etc., and a large number of such determinations, including

many fecal examinations as aid in diagnosis, have been made. Determinations have been made not only for physicians in the United States, but also in the Philippines, Siam, Africa, China, Guam, Central America, and elsewhere, and this phase of the work of the division is constantly growing and apparently meeting a public necessity. In the course of this routine work several new species of parasites have been found which will be described in due time.

Lectures in the medical schools of the United States Navy and United States Army.—During the year, the chief of division has given one course of instruction of about thirty-five hours and another of ten hours before the class in the Medical School of the United States Navy, and a course of six hours before the class in the Army Medical School.

Index catalogue.—The division has continued its cooperation with the Zoological Division of the Bureau of Animal Industry in the preparation of an Index Catalogue of Medical and Veterinary Zoology. Of the authors, the letters A to M are either published or in press; the letters N, O, and P are nearly ready for press. Of the subjects, the *Trematoda* and trematode diseases have been submitted for publication.

International Commission on Zoological Nomenclature.—Cooperation with the International Commission on Zoological Nomenclature has been continued, the chief of the division serving as secretary of the commission. A number of cases have been submitted during the year for interpretation under the code.

DIVISION OF PHARMACOLOGY.

Miscellaneous work.—A number of samples of drugs were assayed for the purveying depot; a few were also tested physiologically. Toward the end of the last fiscal year a number of suprarenal preparations were examined for the Surgeon-General of the Army with a view of testing their comparative physiological activity. It was found that preparations claimed to be of the same strength varied as much as 500 per cent. This work was continued and a short account of it published in the Journal of the American Medical Association in September, 1906; this article aroused considerable discussion as to the necessity of fixing physiological standards for a number of drugs for which there are no satisfactory methods of chemical assay. Work of this character is now being done in connection with the thyroid glands.

Work in connection with the United States Pharmacopœia and the council on chemistry and pharmacy of the American Medical Association.—Considerable work has been done in the division on the physical constants of the chemicals contained in the United States Pharmacopœia. The chief of the division of pharmacology has been working on the United States Pharmacopœia preparation of the thyroid gland with a view of suggesting definite methods of standardization.

Some work has been done for the Council on Chemistry and Pharmacy of the American Medical Association. These investigations have shown that certain drugs offered as new synthetics of definite composition are simple mixtures of well known drugs which could be obtained at any drug store for but a fraction of the price asked; that others claimed to be harmless are preparations of the most dangerous drugs in use; that certain "organo-preparations" contain but 1/1000

as much of the principle claimed as is contained in the usual articles of food, etc. Two editions of the book on "New and Non-Official Remedies" prepared by the council have been issued, and the work has been indorsed by the American Medical Association and many local and State medical societies.

Research Work.—Research work has been carried out on a number of lines. *Cholin.* Cholin is a substance of considerable medical interest from the standpoint of both physiology and pathology; it is one of the most common ptomaines and also occurs in the blood in certain nervous diseases. Improved tests for its presence are very desirable; a method was found by which the tests at present in use could be made 100,000 times more delicate. About twenty hitherto unknown cholin compounds were also prepared in the division; some of these are extraordinarily active physiologically and may possibly prove of therapeutic value. An abstract of this work was presented at the meeting of the British Medical Association last summer and published in their journal. Other work and certain changes in the personnel have prevented the completion of this work. *Alcohol.* A bulletin (No. 33) entitled "Studies in Experimental Alcoholism" was published in February; a number of new facts relating to the pharmacological action of alcohol were discussed. *Thyroid.* A very delicate physiological test for thyroid substance has been discovered by the chief of the division which has enabled him to detect thyroid secretion in the blood in a case of exophthalmic goitre; this is the first evidence, aside from the symptoms, that there is a condition of hyperthyroidism in this disease. The same test has enabled him to detect thyroid in a "tropical fruit" sold as an obesity cure; also in certain "obesity foods" and pills. The technical assistant of the division found another "obesity remedy" purporting to be prepared from the waters of a German spring to consist entirely of cane sugar; other obesity remedies were found to contain such dangerous drugs as colchicine, strychnine, etc. The work on the thyroid has rendered possible the detection of what seems to be a true measure of the physiological activity of thyroid preparations; it is believed that this will make possible the fixing of certain standards for these preparations.

DIVISION OF CHEMISTRY.

Analytical work.—The analytical work of the division for the past year has included the analysis of 301 samples of water, 51 samples of drugs and chemicals, and 2 specimens of urine. An exhaustive chemical examination of the water supplies of the District of Columbia has been made in cooperation with the division of bacteriology with the view of throwing light on the origin and prevalence of typhoid fever in the District of Columbia.

Chemical research.—In addition to the regular routine work of the division, chemical research has been carried on on the following subjects during the period covered by this report.

First, a study of the peroxidase reaction of the blood and the variation in peroxidase activity in health and disease. Second, further studies on a new colorimetric method of determining the free hydrochloric acid in gastric contents. Third, an exhaustive study of methods of determining the percentage of sulphur dioxide in atmospheres containing this gas, and in this connection a study of the burn-

ing of sulphur in air and oxygen under different conditions. Fourth, a comparative study has been made of the principal methods now employed in sanitary water analysis. Fifth, a new colorimeter has been designed which, it is believed, will prove of value in all colorimetric determinations and in field surveys of the waters of any locality. Finally, it is proposed to utilize the same principles in the construction of a new form of hemoglobinometer which it is believed will be a distinct advance over any instrument of the kind now in use.

Work on the new instrument is now well under way.

Publications and scientific communications.—The results of the studies on "Variations in the peroxidase activity of the blood in health and disease" has already been published in Bulletin No. 31 of the hygienic laboratory. A paper entitled "The combustion of sulphur in air and oxygen" by the chief of the division and the technical assistant has been accepted for publication by the American Chemical Journal and will soon appear in this journal. The chemical studies of the water supplies of the District of Columbia have been published as section 12 of Bulletin No. 35 of the hygienic laboratory.

At a meeting of the Society of Biological Chemists, held in this city during the first part of May, 1907, the chief of the division presented three communications embodying the results of investigations carried out in the division during the past year. These were entitled:

(1) "A New Reagent for the Recognition and Estimation of Free Hydrochloric Acid in Gastric Contents."

(2) "Plenolphthalin as a Reagent for Oxidases and other Oxidizing Substances in Plant and Animal Tissues."

(3) "Chemical and Bacteriological Standards Now in Use in Water Analysis."

Abstracts of these papers have been published in the Journal of Biological Chemistry.

THE NATIONAL LEPROSY INVESTIGATION STATION, AT MOLOKAI, HAWAIIAN ISLANDS.

In the annual report for 1906, on pages 214 and 215, a brief account is given of the site selected for the leprosy investigation station, and reference is made to delays which had postponed the establishment of the station. As is stated in that report, the plans and specifications for the construction of the needful buildings had been prepared by the Supervising Architect, and advertisement had been made for bids; so it was hoped that in a short time contracts would be made and the work gotten under way. There was much unlooked-for delay, however, and when, on March 4, 1907, the bids were opened in the office of the Supervising Architect, the lowest of them was found to be far in excess of the amount available. Endeavors were then made to obtain supplemental bids based on a modification of the original plans, but without success. Finally, on May 31, 1907, the Bureau was notified by the Supervising Architect that the Department had definitively rejected all the bids received. Since it seemed impossible to have the station constructed by contract at a price within the allotment made for the purpose, consideration was given to the advisability of buying the necessary material and erecting the buildings by day labor under the superintendence of an agent of the Department. This plan was adopted, and the inspector of repairs of the Service has been

sent to Honolulu, with instructions to prepare there the necessary drawings, purchase building materials and other supplies, contract for labor and transportation, and superintend the construction. It is expected that upon his arrival in the islands, building operations will begin immediately, and that the station will be completed in due time.

The facilities for scientific investigation have been somewhat limited, but considerable progress has been made in work of this character. The director has been engaged on such work as could be done before the erection of the hospital and laboratory. Preliminary experiments have been made with a modification of a special culture medium for the artificial cultivation of the leprosy bacillus, and the inoculation of rats with the bacillus has been begun. The preparation of a bibliographical index of leprosy, which is designed to be a complete one of the subject, has been started; this index is intended for the use of the investigators who will work at the station. A tabulation has been made of the leprosy records of the Hawaiian board of health from the year 1860 to the present time, and the information thus gathered has been used in the preparation of a special report on the present status of leprosy in Hawaii. Some original work in the way of scientific investigation has been done at the temporary laboratory in Honolulu since December, 1906. At the request of the president of the Territorial board of health, the director has also made numerous visits, in the capacity of consulting expert, to the Kalihi receiving station for lepers, situated in the environs of Honolulu.

RELATION OF FLEAS TO THE TRANSMISSION OF PLAGUE.

Many facts brought out by quarantine officers and those engaged in public health work have indicated that an intermediary agent was responsible in transmitting plague from rat to man, and Simond, as early as 1898, demonstrated that at any rate such transfer from rat to rat is possible. It remained, however, for the British plague commission, working in India during the past eighteen months, to prove by a series of brilliant experiments that the rat flea is capable of carrying the disease from one rat to another. They have also demonstrated that close contact of plague-infected animals with healthy animals in the absence of fleas does not give rise to an epizootic among the latter, but if fleas are present the epizootic will spread from animal to animal.

An epizootic may start without direct contact of healthy and infected animals. Infection can take place without any contact with infected soil. This commission also demonstrated that guinea pigs allowed to run free in plague houses, which had been disinfected by the ordinary means, contracted plague. Healthy animals were infected in the laboratory by means of fleas which had been collected by plague-infected rats in other districts. Animals placed in plague-infected houses, protected from soil and contact infection and surrounded by " tangle-foot " paper, did not develop plague, while animals not so protected died of the disease. It appears, therefore, that this series of experiments has practically proven that plague is transmitted from one animal to another by means of the flea.

The species of flea commonly used in these experiments is known as the *pulex Cheopis*, the common rat flea of that country. It appears

that this flea is identical with the common rat flea of Australia—*pulex pallidus*, and that the same flea in the Philippine Islands has been designated *pulex Philippinensis*. In view of the importance of this subject from the standpoint of maritime quarantine and preventive medicine, it was believed that it would be of great value in support of these findings, to determine if possible whether this species of flea is to be found in our ports. A letter was, therefore, addressed to officers of the Service stationed at all of the important ports on the Pacific coast and in Hawaii, requesting that they undertake the investigation of this subject. It was fully realized that such an investigation would necessarily occupy a considerable time, and that the examination by an expert would be necessary to identify the insects collected. It was, therefore, requested that the specimens be forwarded to the hygienic laboratory for that purpose. A few specimens have already been received, and it is hoped that in this investigation some definite information may be obtained which will be of value in the final solution of this all-important public-health problem.

OPINIONS REGARDING MEDICAL DEVICES AND SANITARY APPLIANCES.

During the year a number of requests have been received from different Departments of the Government for opinions as to the therapeutic value of various preparations and sanitary appliances. These letters, together with the papers and devices, have been referred to the sanitary board for consideration. Those received from the Postmaster-General have, in each case, been found to be without efficacy, and the claims made in reference thereto were false. To determine the value of some of the sanitary appliances laboratory examinations were necessary. The results of these examinations have formed the basis of reports as to the merits of the articles. One of these investigations conducted for the Life-Saving Service related to a practical appliance designed for use in maintaining artificial temperature. After careful consideration a report was made in which it was stated that this was of practical value, and that it was believed it would prove to be a valuable addition to the medicine chest of the Life-Saving Service for use in maintaining artificial temperatures in the treatment of persons apparently drowned.

FIFTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

In accordance with the provisions of section 7 of the act of Congress approved July 1, 1902, entitled "An act to increase the efficiency and change the name of the Marine-Hospital Service," the Fifth Annual Conference of State and Territorial Health Authorities with the Public Health and Marine-Hospital Service was held in Washington, D. C., May 29, 1907.

Twenty-two States and the District of Columbia were represented by delegates.

The meeting was held at the New Willard Hotel, the Surgeon-General presiding, and the Assistant Surgeon-General, in charge of the Bureau division of scientific research, assisting as secretary of the conference.

The principal questions discussed were: "The sanitary supervision of milk supplies," "The geographical distribution of malaria," and "Bacillus carriers in the transmission of cholera, diphtheria, and typhoid fever." The conference also considered the desirability of the National Government affording to State health officers the franking privilege in the use of the mails for the distribution of educational circulars and the collection of morbidity and mortality statistics. It was shown that great difficulty is experienced in the collection of these statistics, and that if such provision were made by Congress it would result in more accurate and reliable data for the use of health authorities and the Census Bureau. The delegates from Massachusetts and Florida were designated by the Surgeon-General to investigate the matter.

A committee composed of the delegates from Minnesota, New Jersey, and Rhode Island was also appointed to make suggestions as to the topics of discussion to come before the next annual conference.

Summaries of laws passed, and other matters relating to public health during the year 1906–7, were submitted by the representatives of the several States, and are included as usual in the appendix to the printed transactions of the conference.

THIRD INTERNATIONAL SANITARY CONVENTION OF THE AMERICAN REPUBLICS.

The Second International Sanitary Convention of the American Republics, which was held in Washington, D. C., October, 1905, adopted a resolution to the effect that a convention should be held every two years, and that the next meeting would be held in Mexico City in December, 1907, subject to the call in the International Sanitary Bureau.

In accordance with this resolution and by direction of the International Sanitary Bureau a call was issued June 17, 1907, for the Third International Sanitary Convention of the American Republics to meet in the City of Mexico, December 2 to 7, 1907.

In accordance with paragraph 7 of the resolutions relating to international sanitary police, adopted at the Second International Conference of American States in Mexico, January 29, 1902, a copy of the above-mentioned call was forwarded under date of June 18, 1907, to the Director of the Bureau of American Republics, with the request that he take such measures as were deemed advisable to make announcement of the same.

It was also requested that the Bureau of American Republics request the Department of State to invite the attention of envoys at this capital, whose countries had not as yet ratified the sanitary convention *ad referendum* of Washington, to the desirability of doing so, and urge them to secure representation at the coming convention in Mexico.

The following is the text of the call and the provisional programme prepared by the president-elect of the convention:

INTERNATIONAL SANITARY BUREAU
OF THE AMERICAN REPUBLICS,
Washington, D. C., June 17, 1907.

In accordance with a resolution adopted by the Second International Sanitary Convention of the American Republics it is hereby announced that the Third International Sanitary Convention will be held in the City of Mexico December 2 to 7, 1907.

It is respectfully urged that every republic of the Western Hemisphere be represented at this convention, both those that have been heretofore represented and those which have not taken part in the previous conventions.

It will be remembered that the first convention, held in Washington from the 2d to the 5th of December, 1902, was called in compliance with the fifth of the resolutions relative to sanitary police adopted by the Second International Conference of American States in Mexico, January 29, 1902. These resolutions were accepted as the basis for the work of the first convention, which was of a character chiefly scientific, and resulted in the adoption of certain sanitary and hygienic principles and the establishment of an international sanitary bureau at Washington.

The Second International Sanitary Convention, which was held in Washington from the 9th to the 14th of October, 1905, assumed a more formal character than the previous one, and resulted in the subscription to a "sanitary convention ad referendum" concluded on October 14, 1905, which codified all the measures destined to guard the public health against the invasion and propagation of yellow fever, plague, and cholera. This sanitary convention and referendum has been ratified by at least nine republics, and attention is respectfully invited to the following paragraph contained therein:

"The governments which may not have signed the present convention are to be admitted to adherence thereto upon demand; notice of this adherence to be given through diplomatic channels to the Government of the United States of America, and by the latter to the other signatory governments."

As will be seen below, the conference at Rio de Janeiro in August, 1906, recommended the adoption of the same convention by all the countries therein represented.

RESOLUTIONS ADOPTED AT RIO DE JANEIRO, AUGUST, 1906.

Following are the resolutions of the Third International Conference of American States at Rio de Janeiro in August, 1906, indicating among other measures matters for consideration by the sanitary convention to be held in Mexico City:

"The Third American International Conference recognizes the desirability of the principles of international sanitary police which inspired the last conference held in Rio de Janeiro, as applicable to a specific region, and the convention which was signed in Washington on the 14th of October, 1905, which is applicable to all sections of America, and therefore makes the following recommendations to the countries here represented:

"1. That as a general rule, they should adopt said international convention of Washington, adhering to the same and putting its precepts into practice.

"2. The adoption of measures intended to obtain the sanitation of the cities and especially of the ports, as well as to obtain as far as possible a better knowledge and a better observance of hygienic and sanitary principles.

"3. The desirability of having all American countries represented in the coming international sanitary conference which is to be held in the City of Mexico in December, 1907, and that the respective delegates to that conference should be instructed to study and resolve the following points:

"(*a*) Practical means for giving effect to the second of the present recommendations.

"(*b*) The establishment and regulation in each of the American countries of a commission composed of three public medical or sanitary officers, in order that, under the direction of the international sanitary office, established in Washington, they may constitute an international bureau of sanitary information throughout the American republics, with power to collect and communicate all data relating to public health, and such others as the conference may consider desirable.

"(*c*) The establishment and organization in the place in South America which the conference may designate of a bureau of sanitary information, which will furnish to the International Sanitary Bureau already existing the necessary data to comply with recommendations V, VI, and VII, relative to sanitary police, which were adopted by the Second American International Conference.

"(*d*) The establishment of relations between the International Sanitary Bureau now existing in Washington and the Bureau Sanitaire International of Paris, in order to obtain the best information on sanitary subjects and to reach agreements that will facilitate the objects with which both offices are established.

"4. In accordance with the provisions of paragraph C, art. 3, the city of Montevideo is designated as the residence of the Bureau of Sanitary Information."

PROVISIONAL PROGRAMME FOR THE INTERNATIONAL SANITARY CONVENTION IN MEXICO CITY, DECEMBER 2 TO 7, 1907.

The following programme has been arranged to embody the sanitary principles considered by the previous conventions and in conformity with the resolutions adopted by the conference at Rio de Janeiro:

First. Each delegate will bring a paper relating to the nation he represents. This paper will cover the following points:

(*a*) A report on the existence of transmissible diseases which may prevail in its territory, especially with reference to bubonic plague, yellow fever, cholera, malaria, beriberi, and trachoma. This report will give detailed information on the measures which have been adopted for the prevention or stamping out of any of the diseases above mentioned, if they are unfortunately present in the country represented by the delegate.

(*b*) A report on the condition of the ports of his country, specifying the works which may have been executed therein, those in course of construction and those which are projected, as well as the manner in which the problem of water supply, of proper sewerage and of the connection of house drains with that system of sewers has been resolved, as well as the methods that have been employed or are proposed for the sanitation of the dwellings.

(*c*) A return of the assistance which the general governments may have furnished to the respective states or municipalities for the execution of sanitation works in the cities and ports.

(*d*) A report on all the sanitary police laws which have been issued since the 14th of October, 1905.

Second. Every delegate will suggest some practical means to prevent persons who may be suffering from tuberculosis from transmitting the disease to the healthy persons who may be traveling in their company, either in trains or in vessels.

Third. As forming part of the order of the day the delegates will be at liberty to present original papers relating to the following points:

(*a*) Studies directed to the discovery of the germ of yellow fever;

(*b*) Studies directed to the investigation as to whether there are other means of transmission of yellow fever and malaria besides the sting of the mosquitoes; and

(*c*) Studies directed to the perfection of the methods of combating the mosquito.

Fourth. Each delegate will present a report upon the organization in his own country of the commission of three medical or sanitary officers intended to form part of the international sanitary commission of information of the American Republics, as provided for in paragraph 3 (*b*) of the resolutions adopted at Rio de Janeiro.

Fifth. Report upon the establishment of the Sanitary Information Bureau of Montevideo, as provided in paragraph 3 (*c*) and paragraph 4 of the resolutions adopted at Rio de Janeiro.

Sixth. Report upon the establishment of relations between the International Sanitary Bureau at Washington and the Bureau Sanitaire International of Paris, as provided in paragraph 3 (*d*) of the resolutions adopted at Rio de Janeiro.

Seventh. Besides the full papers and reports above mentioned each delegate will bring an extract of the same, but so concise that it can be read in fifteen minutes. These extracts will be the only ones to be read during the meetings.

Eighth. All the extracts will be written in Spanish and English. Those presented by the delegates from Brazil will be in Portuguese and English, and those by the delegates from Haiti will be in French and English, so that while each delegate reads his extract in his own language the others can follow, reading the same document in the language with which they are familiar.

By direction of the International Sanitary Bureau of the American Republics:

WALTER WYMAN, *Chairman.*

INTERNATIONAL SANITARY CONVENTION OF PARIS.

The International Sanitary Convention of Paris, which was signed *ad referendum* December 3, 1903, and to which reference was made

in my annual report for 1904, was proclaimed by the President with certain reservations May 18, 1907.

The convention as originally signed was not in entire harmony with the letter and spirit of the United States quarantine laws and regulations, and a recommendation was therefore made that it should be adopted only with certain reservations. The principal reservation consisted in the substitution of "observation" for "surveillance" in article 22, and subsequent articles of the convention. The Senate, however, failed to take cognizance of this reservation, having by its resolution of March 1, 1905, given its advice and consent to the ratification without amendment.

In a letter from the Department of State, dated July 10, 1905, it was stated, however, that the convention might be ratified by the President without resubmission to the Senate, provided the reservation was included in the instrument of ratification and in the President's proclamation.

The instrument of ratification containing this reservation was signed by the President August 2, 1905, and the exchange of ratifications took place in Paris April 6, 1907, between the representatives of the participating nations. This agreement which codified the measures necessary to guard against the invasion of plague and cholera emphasizes the responsibility of the different governments to each other in matters pertaining to the public health.

With the object of facilitating the collection of facts concerning the public health, especially those relating to the means of knowing the various stages of infectious diseases and to the measures taken to combat them, provision was made in article 181 of the above-mentioned convention for the establishment of an international bureau of public hygiene at Paris. This convention also intrusted France with the task of presenting to the interested nations propositions regarding the organization of the above-mentioned bureau.

Action has already been taken looking to this end, and it is expected that a conference of delegates of the participating nations will be held at Rome December 7, 1907, to facilitate the exchange of propositions regarding the organization in question. It is believed that the Government of the United States should be a participant both in the creation and in the transactions of the International Bureau of Public Hygiene of Paris, and that the United States Government should, therefore, be represented by a delegate at the proposed conference to be held in Rome. An officer of the United States Public Health and Marine-Hospital Service stationed at Naples, Italy, has therefore been designated as delegate on behalf of the United States to this convention.

Sanitary Reports and Statistics.

PUBLIC HEALTH REPORTS.

The leading feature of the Public Health Reports has been, as in the past, the presentation of synopses of various reports designed to show the prevailing health conditions and the sanitary measures adopted in the United States and abroad.

During the fiscal year statistics of morbidity were added to the mortality statistics of States and cities of the United States published weekly in the Public Health Reports. The information for these re-

ports, as in the case of the mortality statistics of previous years, was based on reports received from State and local health officers. Blanks were sent to all cities of the United States of over 10,000 population, for the purpose of collecting the necessary data. From information received from consular and foreign health authorities statistical reports of foreign countries and cities were prepared. Weekly foreign mortality tables made from statistics furnished in the weekly sanitary reports from consuls were also presented. The list of consulates from which reports are desired has been revised, and efforts have been made through the Department of State to make the reports as complete as possible.

The following synopsis showing the prevalence of cholera, yellow fever, plague, and smallpox throughout the world is drawn from the tables of these diseases as compiled from week to week in the Public Health Reports:

CHOLERA.

Asia was as usual the principal seat of cholera, and in India the greatest ravages were wrought. The most striking outbreak during the fiscal year occured in Kashmir from November to April, during which time 3,910 cases and 2,065 deaths were reported. In Bombay there were reported during the fiscal year 803 deaths; in Calcutta, 3,277 deaths; in Madras, 561 deaths; in Rangoon, 346 deaths. Cholera was also present in Cochin, Karachi, Moulmine, Negapatam, and Tuticorin. In China there were 24 deaths reported at Hankau in October; at Shanghai, 112 deaths in September and October; and in July, 1906, one fatal case was reported at Hongkong. A case was reported at Moji, Japan, in November on a vessel from Shanghai. There were in the Philippine Islands from the outbreak in August, 1905, to December, 1906, 1,103 cases, with 970 deaths in Manila, and 1 case on each of the following vessels: Schooner *Florence S.*, steamships *Ban Yek*, *Vasco Navarro*, and *Dos Hermanos*. In the provinces there occurred from January 1 to December 31, 1906, 9,338 cases and 6,962 deaths. The bureau of health for the Philippine Islands reported 235 cases and 148 deaths during the first quarter of the calendar year 1907. At Iloilo there was 1 case on United States transport *Bolinao*. From February to April, 1906, there were reported at Bangkok, Siam, 224 cases and 198 deaths; and in January, 1907, cholera was again reported present. At Singapore from January 1 to October 16, 1906, there were 185 cases and 167 deaths, and 2 deaths were reported from March 10 to April 6, 1907. The disease was epidemic in the Straits Settlements in 1906 from April to June. At Perak in May there were 64 cases and 34 deaths. In Wellesley Province from April to May, 1906, 107 cases and 81 deaths were reported. At Colombo, Ceylon, from December to April, there were 7 fatal cases.

YELLOW FEVER.

United States.—The following tables show the only cases of yellow fever reported in the United States during each half of the fiscal year:

Yellow fever in the United States as reported to the Surgeon-General, Public Health and Marine-Hospital Service.

AUGUST 17 TO DECEMBER 28, 1906.

Place.	Date.	Cases.	Deaths.	Remarks.
Georgia:				
South Atlantic Quarantine Station	Sept. 24	1		From Spanish ss. Habana from Habana.
Louisiana:				
Iberia Parish—				
New Iberia	Aug. 19	1		
Total		2		

MARCH 17–JUNE 28, 1907.

Louisiana:				
Mississippi River Quarantine Station.	Mar. 20	1		On ss. Cayo Soto.
Texas:				
Galveston	Mar. 17–22	4	1	In quarantine from ss. Basil from Para.

Foreign.—In Cuba yellow fever was present from August to December, 1906. At Habana there were 63 cases with 7 deaths; in Matanzas Province, 10 cases and 4 deaths, one case on steamship *Miguel de Penillos;* in Santa Clara Province, 17 cases and 7 deaths. In Habana Province in 1907, from January to June, 8 cases and 2 deaths were reported, 5 cases imported into Habana from San Nicolas, Habana Province, 1 case from Union de Reyes, Matanzas Province, 1 case each from Ranchuelo and Santa Clara in Santa Clara Province. Yellow fever was reported in Mexico during the fiscal year in Oaxaca at Tuxtepec; in Veracruz at Paraje Nuevo, Tierra Blanca, Tuxpan, and Veracruz; in Yucatan at Progreso, Valladolid, and at Merida. The principal prevalence was at Merida where, from June to October, 1906, there were 107 cases and 63 deaths and, in March, 1907, 2 cases and 1 death. In Central America the disease was epidemic in Salvador in January, 1907, and it was present in Guatemala from August to October, 1906, at Gualan, and in May, 1907, at Gualan and Zacapa; in July, 1906, at Ceiba and Pimienta, Honduras; from June to October, 1906, at Limon, Costa Rica; and in September and October, 1906, at Managua, Nicaragua. At Bridgetown, Barbados, there was a death in December on the steamship *Maranhense* from Para and an imported case in April, 1907, in quarantine. In South America there were reports of yellow fever in Peru, Brazil, Ecuador, and Venezuela. In Peru there were in quarantine 2 cases at Callao and 1 at Lima. Brazil was the principal sufferer. There were 73 deaths at Manaos from January to May, 1907; at Para, during the fiscal year, 164 deaths; and at Rio de Janeiro, 34 deaths. During January there was a death at Pernambuco and the disease was reported present at Nictheroy in February and again in April, 1907. At Guayaquil, Ecuador, there were 178 deaths and the disease was also present at Bucay, Duran, and Huigra. At La Guaira, Venezuela, the disease was present from January to June. In Africa yellow fever was reported present in November and January in Dahomey and in November, 1906, there were 35 cases with 26 deaths in Upper Senegal and Niger.

BUBONIC PLAGUE.

United States.—The only case of plague reported in the United States during the fiscal year was at the Marine Hospital, San Francisco, May 23, from the tug *Wizard*. The patient died May 26.

Foreign and Insular.—Three deaths from plague occurred at Honolulu, Hawaii, in August, 1906, and in 1907, from January to May, there were 26 cases and 21 deaths. One of these deaths occurred on the steamship *America Maru*, in January. Two fatal cases of plague were reported at Trinidad, West Indies, in June, 1907. In Peru the malady was epidemic chiefly at Chiclayo, Lima, Paita, Trujillo, Pacasmayo and San Pedro, though prevalent at many other places. At Chiclayo there were reported during the fiscal year 81 fatal cases; at Lima, 105 cases and 49 deaths; at Paita, 119 cases and 75 deaths; at Trujillo, 199 cases and 157 deaths; and at Pacasmayo and San Pedro, 84 cases and 59 deaths. In Chile the principal prevalence was at Antofagasta and Taltal, but the disease was also present at Santiago and Valparaiso. Brazil suffered extensively. At Rio de Janeiro there were reported 321 cases and 109 deaths; at Para 35 deaths; at Pernambuco, 37 deaths; at Bahia, 72 cases and 42 deaths; and at Campos, 16 cases and 7 deaths. The disease was also present at Santos, São Paulo and in the Island of Itaparica. During the months of December and January there were in Argentina 12 cases and 6 deaths at Buenos Aires and in March and April the malady was present at Rosario and Salta. At Montevideo, Uruguay, in February, there was a death from plague. The disease was present at Concepcion and Asuncion, Paraguay, in January and February, 1907. In Europe there was a death at Trieste, Austria, in November, and a case at Groden, Germany, in May, from the steamship *Wharfedale*, from Buenos Aires. At Cronstadt, Russia, in February and March, 2 cases and 1 death at the plague laboratory. In October, 1906, plague was present in the Transbaikal Territory. In Africa plague was present in Cape Colony, in Egypt, and in British East Africa. In Cape Colony the disease appeared in April and May at King William's Town, 4 cases and 2 deaths being reported. In Egypt there were 1,151 cases and 869 deaths, mainly in the provinces. At Alexandria, 104 cases and 65 deaths were reported; at Suez, 67 cases and 47 deaths; at Port Said, 13 cases and 11 deaths; and at Ismailia, 10 cases and 8 deaths. The disease was scattered throughout the provinces where there were hundreds of cases. In the Island of Mauritius there were 497 cases and 340 deaths. In Asia the chief prevalence of bubonic plague was, as usual, in India, where 1,022,275 cases and 860,556 deaths were reported during the fiscal year. The mortality has increased enormously. The Punjab, where there were 451,066 cases and 390,302 deaths, has been the greatest plague center. The United Provinces reported 228,754 cases and 204,991 deaths and Bombay Presidency, 165,659 cases and 119,745 deaths. There were also extensive outbreaks in Burma, Bengal, the Central Provinces, Mysore State, Kashmir, Central India and Rajputana. In Arabia there was an outbreak of plague at Djeddah; in May, June and July, 1906, there were 75 fatal cases, and during another outbreak from January to May, 1907, 565 cases and 350 deaths were reported. At Bahrein Island in April and May there were 21 cases and 15 deaths. The disease was also present at Aden, Camaran and Tor. At Hong-

kong, China, there were 498 cases and 457 deaths from plague, mainly in the first half of the fiscal year. At Niuchwang, in January and February, there were 57 fatal cases. The disease was epidemic in Amoy in July, 1906, and there were cases reported during the fiscal year at Fuchau and Hankau. At Osaka, Japan, there were over 100 deaths from plague. The disease was present in other Japanese cities, including Yokohama, where, in May and June, there were 3 fatal cases. The Island of Formosa was afflicted with an epidemic that caused between 2,000 and 3,000 deaths. In Australia there were 141 cases and 35 deaths, the chief incidence being at Port Douglas, Sydney, Brisbane, and Cairns. In Turkey plague was present at Bassorah, Beirut, Smyrna, Adalia, and Trebizond. At Seistan, Persia, there were over 100 cases reported in the summer of 1906, and the disease was present at Bushire in May, 1907. Plague was also present at Bangkok and elsewhere in Siam, as well as Singapore, in the Straits Settlements.

SMALLPOX.

United States.—There was, as in the past years, a wide extension of smallpox throughout the United States. Reports, received during the fiscal year, of smallpox gave a total for the United States of 14,377 cases. Among the cities, Galesburg and Peoria, Ill., New Orleans, La., Lawrence, Mass., Detroit, Mich., St. Joseph, Mo., Houston, Tex., Spokane, Wash., and Milwaukee and Appleton, Wis., had a large number of cases. There was an epidemic at Catskill, N. Y., and the disease was very prevalent in Denver County, Colo., Shark County, Ill., Jefferson and Miami Counties, Ind., Mahaska County, Iowa, Hennepin County (including Minneapolis), Minn., and Durham and Wake Counties, N. C.

Foreign and Insular.—The published tables show that smallpox was present in all parts of the world, epidemics being reported in some places and scattered cases in others. In Mexico there were notable prevalences in the City of Mexico and at Aguas Calientes. In South America there were epidemics at Antofagasta and Coquimbo, Chile, and at Pernambuco, Brazil. Marseille, France, had a large epidemic between December, 1906, and May, 1907. There was an epidemic at Funchal, Madeira. Alexandria, Egypt, was the chief city visited extensively by the disease in Africa, and Hongkong, China, was the principal sufferer in Asia.

Medical Inspection of Immigrants.

A total of 1,285,349 arriving aliens were examined by medical officers of the Service to determine their physical fitness for entrance into the United States and its dependencies, Porto Rico, Hawaii, and the Philippines. Seventeen commissioned officers and 33 acting assistant surgeons were engaged exclusively in these examinations and a large number of Service officers, primarily engaged in other Service duties, have examined arriving aliens presented to them. Medical officers were detailed for the same purpose at foreign ports, viz, Quebec, St. Johns, Winnipeg, Victoria, and Vancouver. The officers on quarantine duty in Italy, Japan, and China also inspected aliens at the request of the Department of Commerce and Labor, this

work at some ports exceeding in importance and labor the quarantine function.

The function of the officers at foreign ports is advisory to the steamship companies, and the number of undesirable immigrants reported to have been refused by the companies is evidence of the value of such work. However, this examination is not a perfect safeguard and the chief reliance is upon the rigid examination made at ports of arrival in the United States, which while systematic and rapid is searching and thorough.

Following is a summary of the transactions at the several ports:

Astoria, Oreg.—Passed Asst. Surg. J. M. Holt reports 3,395 alien seamen and 6 immigrants examined at the Columbia River Quarantine Station, of whom 100 alien seamen were certified, approximately 90 per cent of the certified cases being trachoma.

Baltimore, Md.—Surg. L. L. Williams reports 68,340 aliens examined, 990 certified, and 1,765 aliens, suffering from minor defects, brought to the attention of immigration officials. Seven hundred and twenty aliens were treated in hospital.

Boston, Mass.—Surg. R. M. Woodward reports 323 passenger ships arrived bringing 95,082 passengers, and in addition there arrived about 40,000 alien seamen; 3,607 diseased or defective aliens were brought to the attention of immigration officials, and of 732 cases of diseases or defects in which exclusion was not mandatory under the law, 607, or 83 per cent, were allowed to land. But 578 persons were excluded at the port during the year, or seven-tenths of 1 per cent of the total alien arrivals, proving the efficiency of prevailing methods of preparation and examination prior to foreign embarkation.

Special attention has been paid to the detection of mental derangement or incompetency, and 67 aliens were certified as mentally diseased or defective.

Two hundred and eighty cases were admitted to hospital, practically all acute diseases or injuries requiring treatment. Work during the year included the sanitary supervision and medical care of 6,696 detained passengers brought to the detention wharf.

Brunswick, Ga.—Acting Asst. Surg. I. N. Bishop reports 11 aliens inspected, of whom 1 was rejected.

Buffalo, N. Y.—Surg. D. A. Carmichael reports 2,183 aliens examined, of whom 57 were rejected, 41 being trachoma.

Charleston, S. C.—Acting Asst. Surg. F. T. Sams reported 596 aliens inspected, of whom 14 were certified and 3 deported, as compared with 1 alien inspected the previous year.

China-Hongkong.—Passed Asst. Surg. M. J. White reported 4,968 aliens examined, with 884 rejections, 861 being on account of trachoma, 22 scabies, and 1 chancroid.

China-Shanghai.—Acting Asst. Surg. S. A. Ransom reports 201 aliens inspected, of whom 147 were recommended for rejection, and 54 rejected, 50 for trachoma and 4 for favus.

Duluth, Minn.—Acting Asst. Surg. E. L. Cheney reports 5,535 aliens inspected, of whom 70 were certified, and 53 deported.

Eagle Pass, Tex.—Acting Asst. Surg. Lea Hume reports 16,646 aliens examined, and 207 excluded, 134 being on account of trachoma.

El Paso, Tex.—Acting Asst. Surg. J. W. Tappan reports 30,653 aliens inspected, 435 certified, and 425 deported.

Everett, Wash.—Acting Asst. Surg. James Chisholm reports 205 aliens inspected, with no rejections.

Hawaii-Honolulu.—Passed Asst. Surg. L. E. Cofer reports 25,456 aliens inspected, 292 certified, and 292 deported, the majority of the rejections being on account of trachoma.

ITALY—*Naples.*—Passed Asst. Surg. A. J. McLaughlin reports 276 ships inspected at the ports of Naples, Messina, and Palermo, with 243,973 emigrants at Naples, 2,145 at Messina, and 23,113 at Palermo, of whom 14,782 were recommended for rejection, for causes as noted, viz: Trachoma, 6,987; favus, 649; suspected trachoma, 5,395; suspected favus, 190; measles, 8; smallpox, 1; miscellaneous causes, 1,552.

The prevalence of smallpox in Italy during the year required precautions in the matter of baggage disinfection, and vaccination. Sixty-one thousand two hundred and six pieces of baggage were inspected, and 315,061 pieces disinfected.

A well-marked case of smallpox was detected at the final inspection of the steerage passengers for the steamship *Perugia* on June 13, 1907. The case was from the province of Ferrara, northern Italy. Fifty-three probable contacts were held under observation and the case removed to hospital. Disinfection of the emigrants' baggage for the *Perugia* was very rigorously enforced and a careful supervision of the vaccination exercised. The facts were carefully noted upon the bill of health for the information of the quarantine officer at the port of arrival. No other case of quarantinable disease was officially reported at Naples.

The quarantine officer for the port of New York informed the American consul at Naples on September 21, 1906, that a child had died of typhus fever, having arrived at New York from Naples. Doctor McLaughlin investigated the circumstances of the case, and received a report from Asst. Surg. A. D. Foster of the Service that no typhus fever had occurred in the province from which the alien departed.

Owing to the prevalence of typhus fever and smallpox in Greece special care was exercised in the vaccination and inspection of Greeks and in the disinfection of their baggage.

The following circular letter was on April 26, 1907, sent by Doctor McLaughlin to every trans-Atlantic steamship company in Naples:

> Owing to the existence of smallpox in Torre Annunziata, you are requested not to accept passengers from that district until further notice, unless such passengers be held under observation in Naples, for a period of fourteen days before embarking,

and the supervision of vaccination of passengers and disinfection of their effects was more rigorously exercised because of this prevalence of the disease.

The evil of substitution continued, despite efforts to the contrary, and it became necessary to have a supplemental examination at the gang plank by a doctor paid by the steamship company, pending completion of the new pier.

In two years the emigration has increased from 189,117 to 269,231, and the rejections recommended, from 4,956 to 14,782.

JAPAN—*Kobe.*—Acting Asst. Surg. J. Bucknill Fowler reports 25,400 emigrants inspected, 15,189 recommended for rejection, and 10,211 rejected, the principal cause being trachoma.

JAPAN—*Nagasaki.*—Sanitary Inspector Robert I. Bowie reports 6,482 emigrants examined, with 2,550 recommended for rejection, the principal cause being trachoma. Doctor Bowie states that substitution takes place, but that the Service officer at Yokohama has joined him in stopping the evil.

JAPAN—*Yokohama.*—Passed Asst. Surg. H. S. Cumming reports 15,195 aliens inspected, of whom 1,420 were recommended for rejection, 4,447 advised to wait, and 9,328 passed, almost all of the rejections, as previously, having been on account of trachoma. Doctor Cumming reports an improvement in the percentage passed as compared with those passed during the preceding year, due partly to the fact that the local authorities are refusing to grant passports to those known to be physically defective. A large number of intelligent and educated students are embarking for America, while the best looking emigrants are men who appear for examination in uniform, many with decorations granted them for valor. A very interesting feature of the examination is the number of Russian refugees and their preference for traveling by Japanese lines.

Key West, Fla.—Acting Asst. Surg. J. N. Fogarty reports 3,842 immigrants examined, all being admitted but one.

Laredo, Tex.—Acting Asst. Surg. H. J. Hamilton reports 3,675 aliens inspected, 303 certified, and 268 deported, 119 being on account of trachoma.

Malone, N. Y.—Acting Asst. Surg. S. D. Williamson reports 755 aliens inspected, 8 having been certified and deported.

Naco, Ariz.—Acting Asst. Surg. B. C. Tarbell reports 4,604 aliens inspected, 54 having been certified and deported.

New Orleans, La.—Surg. J. H. White reports 4,808 aliens inspected, 133 certified and 21 deported, principally on account of trachoma.

Newport, Vt.—Acting Asst. Surg. J. T. Blanchard reports 145 aliens inspected, of whom eleven were rejected.

New York, N. Y.—Surg. G. W. Stoner reports 1,123,842 aliens inspected, 8,510 certified, and 3,605 deported, the principal cause for rejection being trachoma, for which there were 1,336 rejections. Among the other causes for deportation were tubercle of lung, favus and syphilis.

In addition to the above number, 122,929 cabin and 23,905 steerage passengers were inspected who afterwards proved to be American citizens.

There were 310 patients in hospital at the beginning of the year, and 9,293 patients admitted during the year, with 14 births and 350 deaths. There were 350 pay patients treated with 108,010 days' treatment, and 20 free patients, with 505 days' treatment, the daily average of patients being 297, with 561 patients in hospital at the end of the year.

Nogales, Ariz.—Acting Asst. Surg. A. L. Gustetter reports 1,188 aliens examined, 1,148 admitted, and 40 deported, principally on account of trachoma, with 1 case of leprosy.

Northport, Wash.—Acting Asst. Surg. R. S. Wells reports 1,726 aliens inspected, 133 certified and 85 deported.

Pensacola, Fla.—Acting Asst. Surg. S. R. M. Kennedy reports 45 aliens examined and 1 excluded.

Philadelphia, Pa.—Surg. James M. Gassaway reports 31,796 aliens examined, 1,124 certified, and 131 deported, for causes as fol-

lows: Favus 5, trachoma 78, other causes 48. Six hundred and thirty-four foreign seamen were medically examined.

Philippine Islands.—Passed Asst. Surg. Victor G. Heiser reports 7,708 aliens inspected at ports of entry as follows: Six thousand eight hundred and seventy-three at Manila, with 88 rejections; 379 at Iloilo, with 8 rejections; 107 at Cebu, with no rejections; 154 at Zamboanga with no rejections, and 195 at Jolo with no rejections. Of the total of 96 certified, 45 were deported, 45 held pending action of court, and 6 released.

Doctor Heiser states that the number of inspections during the year is larger than heretofore, owing partly to the ruling that Chinese come under the provisions of the immigration law, and since January 1, 1907, 3,474 Chinese have been inspected.

The causes for rejection were trachoma, 87; poor physique 2; hernia 1; senility 1; syphilis 5. The percentage of rejections was 0.0125.

Port Huron, Mich.—Acting Asst. Surg. A. H. Wise reports 1,741 aliens examined; 28 certified and 14 rejected.

Porto Rico, San Juan, and subports.—Passed Asst. Surg. M. H. Foster reports 1,802 aliens inspected at San Juan, of whom 2 were rejected; at Ponce, 241 inspected, and 2 rejected; at Mayaguez 127 inspected with no rejections; and that at the five other subports of Porto Rico there were no transactions.

Quebec and St. John, New Brunswick.—Passed Asst. Surg. J. S. Boggess reports 15,696 aliens inspected, 280 certified and 36 rejected, 2 on account of senile debility and 34 on account of trachoma.

Richford, Vt.—Acting Asst. Surg. J. H. Hamilton reports 108 alien Chinese inspected and 1 certified.

San Diego, Cal.—Acting Asst. Surgeons B. F. Franklin and W. W. McKay report 890 aliens inspected, with 5 rejections.

San Francisco, Cal.—Passed Asst. Surg. Hobdy reports 8,223 aliens inspected, 1,178 certified, and 365 deported. The principal cause for deportation was trachoma, there being 341 cases. There were 12,665 alien seamen examined, not including 7,121 Chinese seamen.

Sault Ste. Marie, Mich.—Acting Asst. Surg. Wesley Townsend reports 763 aliens inspected, 43 certified, and 30 deported.

Savannah, Ga.—Surg. F. W. Mead reports 28 aliens admitted with no rejections.

Seattle, Wash.—Passed Asst. Surg. M. J. White reports 12 aliens examined, of whom 9 were rejected.

Sumas, Wash.—Acting Asst. Surg. E. S. Clark reports 782 aliens examined, of whom 8 were rejected, 7 of these on account of trachoma.

Tacoma, Wash.—Acting Asst. Surg. F. J. Schug reports 1,133 aliens examined, 96 certified, and 96 rejected, principally for trachoma.

Tampa, Fla.—Acting Asst. Surg. J. H. Altree reports 3,027 aliens inspected, 98 certified and 14 deported.

Vancouver, B. C.—Passed Asst. Surg. W. C. Billings reports 3,646 aliens inspected, 467 certified, and 432 excluded.

Victoria, B. C.—Acting Asst. Surg. Herman Robertson reports 2,781 aliens inspected, 95 certified, and 62 excluded.

Winnipeg, Canada.—Acting Asst. Surg. H. J. Watson reports 4,692 aliens examined, 4,418 admitted, and 274 certified.

Foreign and Insular Quarantine.

The following are extracts from reports from officers detailed to certain foreign ports in the offices of the American consuls for the purpose of making inspection and signing bills of health in conjunction with the consuls, of vessels bound for the United States, its possessions, or dependencies.

The reports from Porto Rico, Hawaii, and the Philippine Islands are from National quarantine stations under the administration of the Department through the Public Health and Marine-Hospital Service.

PANAMA.

Colon.—Acting Asst. Surg. W. W. Scales, assigned for duty in the office of the consul at Colon, reports that from the date of his assuming duty, May 10, to June 30, 1907, 38 steamships were inspected; 2 sailing vessels inspected; 2,922 crew, and 2,952 passengers inspected; and 7 steamships fumigated.

One case of smallpox developed at Colon in the person of a passenger from Cartagena, and was isolated at the quarantine station. Three other cases developed and have been removed from vessels and isolated.

MEXICO.

During the close quarantine season of 1906 and the close quarantine season of 1907 to June 30 medical officers have been detailed in the offices of the United States consuls in the following named ports of Mexico: Progreso, J. F. Harrison; Vera Cruz, John Frick; Coatzacoalcos, W. R. P. Thompson (May 11 to June 30, 1907, only); and Salina Cruz, J. McPherson (June 17 to 30, 1907, only).

The duties of these officers are, as described in previous annual reports, to inform themselves concerning departing vessels, sign the bills of health for same in conjunction with the consul, and perform such quarantine functions with regard to these vessels as to expedite their entry at the port of arrival in the United States.

SOUTH AMERICA.

Following are reports from Service officers stationed in the offices of American consuls at ports of South America, their services being necessary for the protection of the United States and the Canal Zone from yellow fever and bubonic plague.

The data given clearly indicate the importance of these details to the health of this country.

Guayaquil, Ecuador.—Passed Asst. Surg. B. J. Lloyd reports, in part, as follows: One hundred and eight bills of health were issued; 102 vessels fumigated, using 21 tons of sulphur in the process; 2,264 pieces of baggage were authorized for shipment, 158 pieces being disinfected; 199 immune certificates were issued; and 173 persons were vaccinated.

Official reports give 194 deaths from yellow fever, the greater number occurring from November to June, the period of greatest morbidity and mortality corresponding to the hot rainy season. A death rate of 20 per cent would indicate the existence of approximately

1,000 cases of the disease. Some improvement has been made in conditions looking to the suppression of the disease.

Smallpox may be said to be endemic and no effort is made to isolate cases. At the request of the railroad authorities in one instance, Doctor Lloyd assumed direction of measures to prevent spread of the disease among employees.

Doctor Lloyd states that but one case of quarantinable disease was found on board ship; but that the authorities impose five days' quarantine against persons coming from plague-infected ports, counting from the day the vessel leaves the last infected port, and, no provision is made to detain such persons, thus working a serious hardship. Vessels from plague-infected ports are fumigated to kill vermin regardless of the length of time consumed in the voyage. Baggage of persons is disinfected also. Doctor Lloyd further states that for some months past the Peruvian Government has employed traveling sanitary inspectors who accompany passenger vessels from Callao to the Canal Zone and return, the object being to protect against yellow fever and reduce restrictive measures to a minimum and so far their work has been successful. Tuberculosis and malaria are among the prevalent diseases. Typhoid fever is not uncommon and pnuemonia and measles are responsible for many deaths. Influenza generally assumes the epidemic form at least twice yearly and few escape it.

An interesting portion of Doctor Lloyd's report relates to the loss due to expenditures for lighterage, necessitated by the requirement that the greater number of vessels calling shall anchor a considerable distance below the city. In reply to inquiries as to how long this condition will probably continue, Doctor Lloyd has stated that it would probably be as long as it was possible for a case of yellow fever to be treated without being screened, which information has generally seemed to discourage the inquirer rather than animate him. However, the interest in the subject is growing. The hope is expressed by Doctor Lloyd that a treaty be made for the sanitation of Guayaquil, which will materially aid the progress of Ecuador in these matters.

So far as shipping for the Canal Zone and the United States is concerned, every precaution is taken for the protection of the health of the ports of arrival, sulphur dioxide gas being the disinfecting agent principally used.

Callao, Peru.—Asst. Surg. W. M. Wightman reports, in part, as follows: One hundred and ten vessels were dispatched; 94 vessels fumigated, and 16 vessels inspected and passed, or passed on certificate of medical officer. Seven thousand four hundred and sixty-three crew, 3,588 cabin passengers, and 2,724 steerage passengers were inspected; 2,266 persons received health certificates; 485 persons received vaccination certificates; 503 pieces of baggage were inspected and passed; 3,565 pieces of baggage disinfected; 6,832 fresh hides were disinfected; and 19 bales of arsenic curing of hides were supervised.

During the year two vessels arrived with cases of yellow fever on board, and one having had a case of plague. Plague has prevailed to a greater extent than in the previous year and has shown a greater disposition to spread to new localities. The period of greatest incidence of the disease is, practically speaking, the same all over the country, and corresponds more or less to the warmer months. Dur-

ing the year 917 cases, with 510 deaths, were reported for the whole of Peru.

No reliable figures as to other disease are obtainable. Smallpox, though frequent in the interior, manifests itself but little in the coast towns. Vaccination is advised to all and required for school children. The national health authorities have organized a force of vaccinators, the vaccine used being prepared in Lima and appearing to be of an excellent quality. Enteric fever is endemic in Lima and Callao. With the exception of tuberculosis and malaria the only other disease with a morbidity worth noting is influenza, an epidemic of which has been prevailing, the morbidity being great but the mortality comparatively small.

Rio de Janeiro, Brazil.—In his report Acting Asst. Surg. W. J. S. Stewart states that 196 vessels left Rio de Janeiro for United States ports, none for any of its dependencies. The ballast used by these vessels is stone and water, each of a particularly good quality, and the principal cargoes carried are coffee and manganese ore, the former predominating. Six thousand and five crew on vessels were inspected and 2,232 passengers, including those in transit.

Yellow fever, plague, and smallpox exist in Rio de Janeiro, but modern methods of fighting these diseases have been adopted, and they are constantly on the decrease. The work of the authorities in this regard is vigorous. Tuberculosis and malaria are among the other diseases present, while leprosy also exists.

Doctor Stewart states that the sanitary improvements to the water front and city of Rio de Jeneiro are gratifying, and will much facilitate the dispatch of shipping. At present vessels lie at anchor and every precaution is taken to carry out the intent of his detail.

WEST INDIES.

Barbados, St. Lucia, and St. Thomas.—Following the custom of preceding years, during the fiscal year ending June 30, 1907, medical officers have been detailed in the offices of the American consuls at the above-named ports, during the periods of close quarantine, the officer at St. Thomas having assumed his duties during May, 1907.

By the disinfection at these ports of vessels from infected Central and South American ports quarantine detention on arrival at southern ports of the United States is avoided. The utility of these details in previous years has caused a request for the stationing of an officer at St. Thomas, which has been done by the Service, and at least one request has been received to have one of the officers remain at his post after the ending of the close quarantine.

Acting Asst. Surg. R. H. Urquhart has been stationed at Bridgeton; Acting Asst. Surg. A. G. Maylie at Castries, and Acting Asst. Surg. E. B. Pries at St. Thomas.

CUBA.

Medical officers have been on duty at certain ports of Cuba, and the services rendered by them are outlined in the following statements:

Havana.—Passed Asst. Surg. J. W. Amesse states:

The salient features of the work at Habana were the second American intervention, the continuance of yellow fever in Habana and the

island generally, and the establishment of a detention camp at Triscornia for passengers electing to enter southern ports during close quarantine.

Following a revolution, the administration of Cuban affairs again devolved upon the Government of the United States. From a sanitary view point this transfer was significant. There had been laxness in sanitary work in the interior and many districts had retrograded to deplorable hygienic conditions, requiring attention. Among the first undertakings of the new régime was the creation of an efficient sanitary service, supervised by an officer of the Army Medical Department. In the conferences leading up to this action the Service was invited to participate and submit recommendation for the improvement of sanitary conditions, both maritime and municipal. The benefits have been promptly shown in the elimination of yellow fever from Habana.

The first case of yellow fever reported was August 7; 3 cases were recorded for the month, 7 for September, 24 for October, 23 for November, 3 for December, and none for the last six months. Of the 61 cases for Habana, 9 resulted fatally. For the interior of Cuba there were reported 47 cases, with 21 deaths.

The regulations bearing on the treatment of vessels and the supervision of passengers and personnel. for the protection of infectible territory in the United States, were carefully observed, and on June 11 a detention camp was established at Triscornia. This place is isolated and admirably situated from a sanitary standpoint. All nonimmune passengers bound for southern ports are here detained and are under the observation of the Service. Upon completion of detention they are conveyed directly to the ship and kept under guard until departure.

One thousand three hundred and nine bills of health were issued, 36,640 passengers inspected, 46,768 crew inspected, 323 vessels fumigated, 1,991 immunity certificates issued, and 6,044 pieces of baggage. inspected and passed.

Matanzas.—Acting Asst. Surg. E. F. Nunez states as follows:

Since the outbreak of yellow fever during October, 1905, the Province of Matanzas has not been free from the disease. No case has originated in the city, but sporadic cases have been reported at country towns. In consequence quarantine restrictions have been enforced against all vessels, passengers, and crews bound south of the southern boundary of Maryland. On November 15, 1906, fumigation of steamships lying in open bay was discontinued and the operation continued as to those going alongside wharf; but on May 28, 1907, more stringent measures were enforced in view of the recrudescence of yellow fever in the Provinces of Habana and Matanzas. These measures are being carried out at the end of the fiscal year.

Twelve cases of yellow fever occurred in the city and province, with four deaths. Every case occurred in Spanish subjects, tending to show a greater susceptibility to the disease on their part, especially during the period of acclimation. But one case of quarantinable disease arrived on a vessel. Quarantine was maintained by Cuba against Mexico, Central American republics, Colombia, and Venezuela. Quarantine restrictions against the Canal Zone and the Republic of Panama were, on account of improved conditions, abolished on May 2, 1907, and on June 14 similar action was taken with regard to Tam-

pico, Mexico. Quarantine was decreed against Trinidad during June on account of plague.

Two hundred and fifty-four bills of health were issued, 7,123 crew and 343 passengers inspected, 39 vessels fumigated, 17 certificates of vaccination granted, and 66 certificates of immunity issued.

Santiago.—Acting Asst. Surg. Richard Wilson states:

As in former years work at Santiago has consisted principally in issuing bills of health to vessels bound for the United States and its dependencies, to inspect them, and to disinfect them, when necessary.

Two hundred and ninety-six bills of health were issued, 5,164 passengers and 12,546 crew were inspected, 26 vessels quarantined, 63 vessels disinfected, and three vaccination certificates issued for the Canal Zone and Panama.

During the year the water supply of Santiago was very inadequate and of poor quality, but new waterworks are nearing completion. The sanitary condition was fair, but mosquitoes are abundant, and the death rate from diarrhea has been large and typhoid fever increased. The city was comparatively free from infectious disease; no yellow fever developed, nor was any brought in.

Cienfuegos.—Acting Asst. Surg. C. J. Marsillan states:

Since his appointment September 25, 1906, to the end of the fiscal year 165 vessels were inspected, 77 vessels fumigated, 242 bills of health issued, 7,573 crew inspected, 20 landed, 10 taken on; 33 immune certificates issued, and 123 passengers inspected.

Beginning October 13, 1906, Doctor Marsillan classified the condition of Cienfuegos, on bills of health, as "infected," on account of yellow fever in the city. This classification was sustained until January 20, 1907, when a classification of "suspicious" was begun up to April 1, 1907, since which time all bills of health issued at the port have been "clean." The work of the station has mainly consisted in the issuing of bills of health and immune certificates and inspection and fumigation of vessels.

No quarantinable disease arrived at the port and only water ballast has been taken, several vessels having gone out at "swept hold." Doctor Marsillan says the instructions regarding the various operations at the port have been strictly complied with.

The prevailing diseases have been malaria, tuberculosis, and intestinal disorders. The water supply was inadequate during a portion of the season, and the sanitary improvements are very slow in materializing.

Banes.—Acting Asst. Surg. E. F. McConnell arrived at Banes July 12, 1906, and remained until October 7, 1907. He states no quarantinable disease was found during that period. Fifty-eight bills of health were issued.

Sagua La Grande.—Acting Asst. Surg. F. R. Maura states:

From August 17 to November 1, 1906, bills of health were issued to 15 vessels, 4 of which were fumigated.

Doctor Maura states Sagua La Grande is a place of about 22,000 population, from which the principal export is sugar. There has not been any yellow fever in the city for some years.

Cardenas.—Acting Asst. Surg. A. C. Ives reports:

Fourteen vessels were inspected and 14 bills of health issued, 335 crew inspected on outgoing vessels, 5 immune certificates issued, and 6 vessels fumigated.

The port has been remarkably free from infectious diseases of all kinds during the period of Doctor Ives's operations, August 14 to November 1, 1906, one case of leprosy having been discovered, with one case of diphtheria and no smallpox. The local hospital is prepared to care for yellow fever should it appear.

HAWAII.

Passed Asst. Surg. L. E. Cofer, chief quarantine officer of the Territory of Hawaii, submits a report for Honolulu and the subports, which is in part as follows:

Honolulu—Division of outgoing quarantine.—On account of the presence of plague in Honolulu outgoing quarantine was in force at the beginning of the year and was raised July 14, 1906. Outgoing quarantine was again imposed on account of plague on April 18, 1907, and was in force at the end of the year.

TRANSACTIONS.

Vessels inspected and bills of health issued	68
Vessels disinfected and bills of health issued	32
Cabin passengers inspected	1,008
Steerage passengers inspected	1,887
Crew inspected	1,344
Steerage baggage disinfected—pieces	2,351
Baggage for crew disinfected—do	1,351
Hides disinfected	84
Freight disinfected—pieces	0
Declined certificates on account of fever	41

Division of quarantine station proper.

Orientals detained in quarantine for observation	2,768
Europeans detained in quarantine for observation	1,558
Baggage disinfected—pieces	3,919
Days the station has been in quarantine	51
Persons vaccinated	1,235
Persons treated in hospital with quarantinable diseases	19
Vessels fumigated with SO_2	13
Autopsies	2
Cremations	1
Cases of measles from the Portuguese immigrant ship *Sureric*, detained on station and treated by Territorial authorities	95
Cases of sickness, various, from Spanish immigrant ship *Heliopolis*, detained on station and treated by Territorial authorities	150
Cases of confinement among immigrants	2

Division of incoming quarantine.

Month.	Steam vessels inspected.			Sailing vessels inspected.		
	Number.	Crew.	Passengers.	Number.	Crew.	Passengers.
July	20	3,180	3,565	11	180	6
August	19	2,564	3,613	13	226	19
September	23	3,645	4,233	9	174	15
October	22	2,778	3,379	5	94	
November	19	2,251	5,610	7	101	7
December	23	2,864	3,836	7	92	4
January	18	2,133	4,478	3	62	2
February	21	4,139	4,505	9	153	
March	24	2,499	1,951	19	690	15
April	23	3,143	7,112	5	76	10
May	29	3,822	6,401	9	137	20
June	21	2,321	5,660	7	100	6
Total	262	35,439	54,343	104	2,085	104

With regard to the outbreak of plague in Hawaii and the measures for its suppression Doctor Cofer states the outbreak may be said to have started during March with the appearance of a group of three cases about 10 miles from the city of Honolulu, in the persons of Japanese laborers. The disease was due directly to the importation of plague-infected rats from Honolulu. Between April 7 and May 22 there occurred 34 cases and 18 deaths from the above-named focus. During the same period 2 new foci, involving 4 deaths from plague, were found in the city of Honolulu.

The outbreak in the city proper was shown to have been also directly due to the presence of plague-infected rats. Cases of plague occurred at irregular intervals up to May 22, when the outbreak may be said to have ended.

Measures for the suppression of the outbreak were taken by the Service and by the Hawaiian Territorial board of health.

PORTO RICO.

Passed Asst. Surg. M. H. Foster, chief quarantine officer of Porto Rico, stationed at San Juan, reports:

Two hundred and twenty-nine vessels were inspected and passed, 59 vessels permitted to transact business in quarantine, 10 vessels disinfected, 3,173 passengers for San Juan inspected, 10,142 passengers in transit inspected, 19,845 crew inspected, and 416 bills of health issued.

There were 687 nonimmune passengers coming from ports infected or suspected of infection with yellow fever detained for observation at the quarantine station for five days, and two vessels arrived with smallpox on board, and the cases were treated at the quarantine hospital and recovered. The chief aim of the quarantine on behalf of Porto Rico is to keep out yellow fever. During the year 7 cases of sickness of a suspicious nature were taken to quarantine hospital and held for diagnosis. Many vessels from infected ports were permitted to transact absolutely necessary business in quarantine under guard without any procedures. As San Juan is a port of call for several large steamship lines, this course is absolutely necessary. During the year no yellow fever appeared on the island, and there was no outgoing quarantine.

At the subports of Ponce, Mayaguez, Aguadilla, Arecibo, Humacao, Arroyo, Fajardo, and Culebra (naval station) a total of 317 vessels was inspected, 101 vessels held in quarantine, 11 vessels disinfected, 16,284 crew inspected, 11,313 passengers inspected, and 801 bills of health issued.

INDIA.

Calcutta.—Acting Asst. Sug. O. M. Eakins reports:

Fifty-two vessels cleared during the year carrying 2,856 crew and 5 passengers, of whom 9 were recommended for rejection.

CHINA.

Hongkong.—Passed Asst. Surg. M. J. White reports:

The work may be summed up as certification or disinfection of cargo, inspection of vessels, crews and passengers, and the disinfection of the baggage of crews and steerage passengers.

Four sailing vessels were inspected, 413 steam vessels inspected, 25 vessels fumigated, and 40,591 crew and 11,610 passengers inspected, with three rejections. Effects of 26,436 crew and 5,361 passengers were disinfected. Two hundred and forty-one pieces of baggage were inspected and labeled and 31,169 pieces of baggage disinfected and labeled. Two hundred and ten bales of hides (cargo) were disinfected; 260 cases of human hair, 205 cases of bristles, and 1,122 bales of feathers (all cargo) stored in godown.

The health of Hongkong during the year was good and the number of communicable diseases small. Several cases of plague were imported from Canton and Macan, there having been an epidemic at the latter place. Fifty-five cases of diphtheria, 352 cases of smallpox, and 202 cases of plague were reported.

Shanghai.—Acting Asst. Surg. S. A. Ransom reports:

Precautions have been taken to ascertain the condition of freight in the settlements and beyond, as well as the disinfection of personal effects, in order that intelligent supervision might be kept over the shipping from Shanghai. A steam disinfecting plant was installed during the year by private capital, and work of this class coming under the jurisdiction of the Service has been done under supervision at this plant at but little increased cost to the shipper. The plant consists of a barge fitted with 30-horsepower boiler, steam chamber, shower baths, etc., accommodating from 20 to 25 men. The below-deck space is divided into compartments for use before and after treatment, no communication being allowed. Provision is also made for use of sulphur by the pot method and by formaldehyde gas.

During the year inspection on board the mail steamers bound from Hongkong to the United States via Shanghai and Japanese ports has been discontinued, and inspection of those embarking at Shanghai only, substituted therefor, proper precautions being taken with those embarking during their stay at Shanghai.

All vessels bound direct to Manila or other American possessions are inspected at the hour of sailing, or as near it as possible, and such vessels as change crew or are otherwise exposed to infection at Shanghai are required to submit to disinfection and the taking of precautionary measures.

Tuberculosis, cholera, and smallpox have been prevalent in Shanghai during the year, the mortality among natives being great.

During the year 45 original and 121 supplemental bills of health were issued; 10 vessels spoken and passed; 150 steamers and 6 sailing vessels inspected and passed; 26 steamers and 3 sailing vessels disinfected; 20,725 crew on steamers and 101 crew on sailing vessels inspected; 9,889 passengers on steamers and 7 passengers on sailing vessels inspected; 60 pieces of freight disinfected; 37 pieces of freight rejected; 543,585 pieces of freight viséd; 396 pieces of baggage inspected; 2,587 pieces of baggage disinfected; 1,047 vaccination certificates issued; and 64 cases of illness investigated.

JAPAN.

Yokohama.—Passed Asst. Surg. Hugh S. Cumming reports:

Two hundred and seventy bills of health were issued: 239 steam vessels inspected and 20 sailing vessels inspected; 32,836 crew and 40,267 passengers inspected; 9,050 persons required to bathe and

undergo special inspection; 8,689 pieces of baggage disinfected and labeled, and 25 pieces of freight disinfected.

In case of vessels for Manila or United States ports, if arriving from clean ports with American bills of health or clean history, they are fumigated with sulphur dioxide for destruction of rats. Especial endeavor is made in this way to assist the chief quarantine officer of the Philippines.

Every effort is made to keep informed as to sanitary conditions, and to inform those interested in shipping of their duties, in order to carry out the desires of the Service.

There has been but little smallpox in Yokohama and vicinity, and for the first time in several years pest has appeared, the disease having slowly spread through the city. The local authorities have been taking energetic steps to stamp the disease out. Diphtheria, dysentery, and typhoid fever have also prevailed.

Kobe.—Acting Asst. Surg. J. Bucknill Fowler reports:

Two hundred and seventy-six vessels inspected, with crew of 29,405 and total alien steerage passengers 14,554; 21,679 pieces of baggage disinfected, and 110 cases of hair, hides, etc.

Nine cases of plague, and one case of smallpox occurred at Kobe. There was no cholera.

Nagasaki.—Sanitary Inspector Robert I. Bowie reports:

The health of Nagasaki has continued uniformly good for the year, though sporadic cases of plague have appeared near the city. Trachoma continued as widespread as ever. Dr. Bowie says substitution occurs, but that every precaution possible is taken to avoid it. One hundred and nineteen steamers, 19,568 crew, and 22,492 passengers were inspected.

PHILIPPINE ISLANDS.

Passed Asst. Surg. Victor G. Heiser, chief quarantine officer for the Philippines, reports:

The health situation in the Philippines is more satisfactory than at any time since American occupation.

Cholera is not known to be present in the Islands; there has been no case of plague since April, 1906, and there is less smallpox than for any other period during the past fifty years. Not one person has died from this disease in the provinces, nor has there been one death from it in Manila. Owing to the thorough and persistent vaccination of crews, only one case of varioloid occurred among them. Many islands have been cleared of lepers, and more than 1,000 are now actually isolated. Great assistance in this improvement has been rendered by the Service in the Islands and at Chinese and Japanese ports. Not only was not a single case of quarantinable disease permitted to enter the Islands from foreign countries, but the efforts in preventing the spread of cholera by sea, which prevailed extensively in Manila at the beginning of the fiscal year, have been successful.

Personnel.—Passed Asst. Surg. Victor G. Heiser, chief quarantine officer for the Philippine Islands. Manila: Passed Asst. Surg. Victor G. Heiser, in command, Passed Asst. Surg. T. B. McClintic, Passed Asst. Surg. Chas. W. Vogel, Asst. Surg. Joseph Pettyjohn, Pharmacist and Disbursing Officer N. C. Comfort. Mariveles: Asst. Surg. R. E. Ebersole, Asst. Surg. Frank K. McKeon. Iloilo: Asst. Surg.

R. H. Creel. Cebu: Asst. Surg. Herbert M. Manning, Pharmacist Charles R. McBride. Zamboanga: Acting Asst. Surg. J. F. Siler. Jolo: Acting Asst. Surg. Charles B. Ewing. Cavite: Acting Asst. Surg. D. N. Carpenter. Olongapo: Acting Asst. Surg. C. P. Kindleberger. Total personnel, including employees, 85.

The present chief quarantine officer also occupies the position of director of health for the Philippine Islands, the health department of the Philippines being a bureau under the insular government.

Cholera.—Vigorous measures have been taken to prevent the spread of cholera by sea from Manila and nearby provinces to other islands in the Philippines. The experience of the Service with cholera during the year has still further demonstrated that its spread by sea can be successfully controlled; that the incubation period of the disease is practically forty-eight hours, and that persons who ordinarily travel as first-class passengers practically never carry cholera. In view of this, the outgoing quarantine detention was reduced from five to two days.

Plague.—Since the Bureau of Health has adopted the plan that plague may be eradicated by isolation of the sick and the destruction of plague-infected rats, complete success has been attained. There has been no case of plague in the Philippine Islands during the year, except those from accidental inoculations while prophylactic measures against cholera were being taken in Bilibid, November 16, 1906.

The record of the Philippines stands in favorable contrast with that of the rest of the Orient with regard to plague.

Smallpox and vaccination.—Two vessels from foreign ports, and three interisland vessels arrived at Philippine ports with smallpox on board. The cases were removed and the usual procedures ordered. On the U. S. cruiser *Chattanooga* several cases occurred before her arrival at quarantine. At Cebu, the British steamer *Mazagon* had one case and was treated. The vaccination of the crews of vessels engaged in the interisland trade has been continued. The practice of requiring crews to have Service vaccination cards has been continuel and to this practice may be attributed the absence of smallpox on vessels; none of the cases detected being among crews. The card system has proven satisfactory.

No greater proof as to the efficacy of vaccination exists than in the Philippine Islands. Provinces heretofore having had from 2,000 to 6,000 deaths from smallpox every year, have not had a single death from the disease since their vaccination has been completed.

Leprosy.—No cases of leprosy were detected at quarantine. The vessels used in transporting lepers to the colony were thoroughly disinfected on three occasions.

The insular government has adopted the policy of isolating all lepers possible, instead of such only as were subjects of charity, the solution of the problem thus rapidly passing from the theoretical to the practical stage.

Vessels boarded.—There were 6,444 incoming vessels inspected at ports of entry. At Manila there were 3,193; at Iloilo, 1,198; at Cebu, 1,855; and at other ports, 198. At Jolo and Zamboanga only vessels from foreign ports direct are inspected. At Iloilo vessels from Panay and Negros ports nearby are allowed to come and go without restriction. At Cebu, vessels from the island of Cebu are treated as ferry-

boats, do not await inspection and do not carry bills of health. At Manila, army transports carrying surgeons, and vessels from Subig and Olongapo are not subject to quarantine inspection. The Service inspects vessels from sunrise to sunset, and later when proper and required.

Vessels disinfected.—Eighty-five vessels were disinfected—79 at Manila, 2 at Iloilo, and 4 at Cebu.

Four vessels were disinfected on account of cholera, 6 on account of smallpox, 3 on account of being employed in transporting lepers; 1 for scarlet fever; 1 on account of cerebro-spinal meningitis, and the remainder because they came from infected ports or were proceeding to United States ports. Not one secondary case of any quarantinable disease occurred among the personnel detained from disinfected vessels.

Three naval vessels were disinfected upon request, and vessels bound for the United States, carrying steerage passengers, have been partially disinfected, the crews and steerage passengers bathed and their effects disinfected. Regular army transports for the United States were all partially disinfected.

Fumigation of vessels.—Fumigation once every six months of all vessels engaged in the interisland traffic has been continued. Owing to this, the number of rats has been reduced so that very seldom more than a dozen are found on even large vessels. One hundred and sixty-one vessels were fumigated; 116 at Manila, 14 at Iloilo, and 31 at Cebu.

Cargo.—Similar requirements to those previously enforced have been in effect during the year.

Outgoing quarantine.—Seventy-nine vessels were granted consular bills of health for ports on the mainland of the United States, or on its possessions. Eighteen of these vessels were partially disinfected; nine were fumigated throughout. Seventeen army transports were partially disinfected and their crews and steerage passengers bathed and effects disinfected. During the larger part of the year, on account of cholera being present in the islands, special precautions were taken, and until October 22, 1906. sailing vessels bound for the United States, on account of the possibility of their being rendered helpless if a few of the crew were seized with cholera, were held five days under observation before sailing.

During the year, 27,270 pieces of baggage were disinfected, and 26,291 pieces passed after inspection. The source, condition, and liability to convey infection of 409,630 pieces of miscellaneous cargo were investigated, and the cargo certified before loading on vessels for the United States; 2,421 pieces of cargo were disinfected, and in a number of cases permits for shipment were refused.

Aid to other services.—1. Board of marine examinations: The examination of candidates for license as masters, mates, and engineers on American vessels in the islands has again been conducted by the Service during this year. The examination, as previously reported, is a complete physical examination, and corresponds to the examinations made by boards of the Service of candidates for officers in the Revenue-Cutter Service. During the year 445 examinations were made, 366 persons were passed, 45 were rejected, and 44 were given provisional certificates.

2. Immigration service: The officers of the Service on quarantine duty at the ports of entry inspected during the year 7,708 aliens, and certified 96 as being afflicted with excludable diseases, or conditions which would affect their ability to earn a living. Of the number certified, 45 were deported, 6 released, and 45 remain in the islands at the close of the year awaiting decision of appeals, or deportation.

3. Bureau of health: Vessels in port and in the river were disinfected on account of diseases occurring thereon. Water transportation was furnished for carrying out a number of important functions of the sanitary work in the river and bay. Hides, animal food products, etc., were certified for landing and shipment.

4. Bureau of education: At the request of the director of education, students bound for the States to complete their education were given a rigid physical examination before being finally appointed to the scholarships.

5. Bureau of navigation: Officers and men are examined to determine their fitness for promotion, or for appointment to positions in the coast guard, or light-house service, either as officers, cadets, or keepers. Cutters and launches were disinfected and fumigated.

6. Coast and geodetic survey: One physical examination was made of an employee of that service.

7. Bureau of posts: During the outgoing quarantine the post-office bureau was extended every aid practicable both at Manila and Mariveles for the expeditious shipment of mail. Incoming mail steamers were boarded out of regular hours and mail allowed to be landed.

8. Bureau of civil service: Special physical examinations were made, at the request of the civil service board, of applicants for certain positions. Examination papers were examined and rated.

9. Panama Canal Zone: Household goods and baggage bound for the Canal Zone were inspected and passed, or disinfected and certified. Travel to the Zone being via the States, much of the cargo destined for the Zone is treated with the other cargo being shipped to the United States.

10. Weather bureau: Storm signals are displayed at the quarantine station at Mariveles as directed by wire from the Manila observatory. This service is greatly appreciated by the shipping, because Mariveles Bay is a safe and much used refuge for vessels when typhoons are threatening.

11. United States Army: Transports were disinfected when requested on account of measles or other minor communicable diseases being aboard, and fumigated when desired during the year. Launches were fumigated to rid them of vermin.

12. United States Navy: Three vessels were disinfected, including one of the largest in the Navy. One vessel was held under Service observation for fourteen days at the request of the naval authorities.

13. Bureau of agriculture: Upon request of the bureau of agriculture, vessels which have carried diseased cattle have been regularly disinfected.

Interisland quarantine.—At the beginning of the fiscal year, outgoing quarantine of two days was imposed at Manila on all vessels for interisland ports, except those near Manila, in order to prevent cholera being conveyed.

Beginning August 14, 1906, vessels to ports at which army medical officers were stationed and were permitted to act as quarantine officers,

were allowed to leave Manila without quarantine, the voyage to count as the quarantine period, with rigid inspection upon arrival.

On October 3, 1906, the detention period was reduced to twenty-four hours for the majority of vessels. For those bound for ports at which Service officers were stationed, no detention was required.

On November 10, 1906, all outgoing quarantine restrictions at Manila were removed, under certain minor restrictions.

After May 1, 1907, masters of vessels beginning a voyage from one Philippine port to another were not required to obtain bills of health, thus removing all quarantine restrictions on outgoing vessels.

At Iloilo an outgoing quarantine of three days was imposed on September 14, 1906, and continued in force, with modifications to meet the local conditions, until November 5, 1906.

Floating equipment.—The 6 vessels belonging to the Service in the Philippines, 4 launches and 2 barges, were in commission all the year. Both launches have rendered excellent service and are in good condition.

Laboratory of the Service.—The laboratory was of great service in conducting the numerous physical examinations, and in confirming the diagnosis of cholera and other diseases occurring on vessels. During May, 1907, all apparatus was sent to Mariveles, thus joining the two outfits. Some extra apparatus was transferred to the Bureau of Health.

Quarantinable diseases in Manila, fiscal year 1907:

Cholera:	
Cases	744
Deaths	646
Smallpox:	
Cases	23
Deaths	0

Quarantine stations.—Detailed descriptions of Philippine quarantine stations may be found in the Service annual report, 1906.

The Mariveles station has been found equal to all demands. The station buildings have been kept in good repair by station employees, and the main wharf extensively repaired.

The Cebu station is in a good state of repair, practically complete, and ranks with any in the Service.

Summary of quarantine transactions, both incoming and outgoing, for the Philippine Islands, fiscal year ended June 30, 1907.

	Manila.	Iloilo.	Cebu.	Cavite.	Olongapo.	Zamboanga.	Jolo.	Total.
Vessels inspected	3,472	1,416	1,855	27	41	64	66	6,941
Vessels detained in quarantine	411	209	1	0	0	0	0	621
Vessels disinfected	63	2	4	0	0	0	0	69
Vessels fumigated to kill vermin	116	14	31	0	0	0	0	161
Bill of health issued	2,771	625	117	35	0	0	0	3,548
Pieces of baggage disinfected	43,884	77	491	0	0	0	0	44,452
Pieces of baggage inspected and passed	30,414	0	38	0	0	0	0	30,452
Pieces of miscellaneous cargo certified	319,639	0	0	0	0	0	0	319,639
Cases of quarantinable diseases detected on vessels:								
Cholera	3	1	0	0	0	0	0	4
Smallpox	3	0	0	0	0	0	0	3
Persons detained in quarantine	23,403	3,343	2	0	0	0	0	26,748
Crew inspected	153,141	41,886	45,441	10,073	5,607	4,609	2,989	263,749
Passengers inspected	92,445	15,643	16,859	6	822	1,531	1,625	128,931
Persons vaccinated	4,099	506	180	0	0	0	0	4,785
Persons bathed and effects disinfected	15,942	67	365	0	0	0	0	16,374

Expenditures by station.

Manila:		
General Service expenses	$13,850.18	
Launch expenses	6,306.925	$20,157.105
Mariveles:		
General Service expenses and supplies	14,341.995	
Repairs to buildings and wharfs	6,119.965	
New construction and equipment	513.91	20,975.87
Iloilo:		
General Service expenses	2,692.765	
Launch and barge expenses	4,009.50	6,702.265
Cebu:		
General Service expenses	5,082.01	
Launch expenses	2,933.965	
Repairs to building, wharf, and reservation	226.275	
New construction and new equipment	730.66	8,972.91
Jolo:		
General Service expenses	180.00	180.00
Zamboanga:		
General Service expenses	610.00	610.00
	57,598.15	57,598.15

NAPLES, ITALY.

For report of quarantine transactions at Naples see report of Passed Asst. Surg. A. J. McLaughlin, under head of "Medical inspection of immigrants."

FRUIT PORT INSPECTION SERVICE.

An explanation of Service activity at fruit ports is given in the 1906 annual report.

In view of the importance attached to this work, the Bureau has during the season of 1907 employed Acting Asst. Surg. J. N. Thomas, an officer trained in the sanitation of vessels with respect to epidemic diseases, as a traveling inspector of fruit ports, with headquarters at New Orleans.

The Bureau believes the services of this officer have been of great value, and that this addition to the safeguards thrown about the fruit trade is a step in advance.

The following-named acting assistant surgeons were detailed in accordance with custom, to enforce the regulations relating to fruit vessels which permit said vessels to enter ports of the United States without quarantine detention: Belize, British Honduras, H. I. A. Cooke, season of 1906; W. B. Robertson, season of 1907; Livingston and Puerto Barrios, Guatemala, L. A. Wailes; Puerto Cortez, Honduras, P. J. Kahle, season of 1906; R. P. Ames, season of 1907; Ceiba, Honduras, W. B. Robertson, season of 1906; V. C. Reynolds, season of 1907; Tela, Honduras, C. K. Roe; Bluefields, Nicaragua, T. B. L. Layton; Port Limon, Costa Rica, D. W. Goodman; Bocas del Toro, Panama, Paul Osterhout; and Santa Marta, Colombia, C. L. Mengis.

Following are the reports from the officers at the several stations:

BELIZE, BRITISH HONDURAS.

Season of 1906 (July 1 to October 31).—Thirty-seven vessels were inspected; carrying 1,206 crew and 104 passengers. The quarantine board of Mobile Bay accepted no passengers from this port on fruit vessels, and the Louisiana board required six days detention in camp

with observation before sailing, and from June 20 until September 6 passenger traffic to New Orleans was stopped.

The condition of the port remained practically the same as noted in report for 1906.

Season of 1907 (April 1 to June 30).—Sixty steamers and 3 sailing vessels were inspected; 31 steamers and 1 sailing vessel fumigated; 1,951 crew on steamers and 18 crew on sailing vessels inspected; 353 passengers on steamers and 208 passengers on sailing vessels inspected, and 157 passengers in transit inspected.

Health conditions were satisfactory from a quarantine standpoint, and the authorities appeared to be active in their efforts to detect disease.

LIVINGSTON AND PUERTO BARRIOS, GUATEMALA.

Season of 1906 (July 1 to October 31).—Doctor Wailes reports that despite the disastrous experience of Livingston during the season of 1905, very little advance in matters of sanitation was made. A small cabin across the river from the town for a house of detention, and the screening of a few cisterns by the foreign residents, comprised the measures taken, although a board of health was organized and several meetings held. Malaria and dysentery prevailed, the latter being particularly fatal to children.

The health of Puerto Barrios remained good during this period.

Season of 1907 (April 1 to June 30).—Doctor Wailes upon arrival at Livingston and Puerto Barrios found prevailing some cases of dysentery, enteric ailments among children, and malaria.

In April rumors were rife of unusual sickness on the railroad, and Acting Asst. Surg. J. N. Thomas, arriving just at the time on a tour of inspection, made with Doctor Wailes, a visit to Zacapa, Gualan and other places at which fever had prevailed so extensively the past two or three seasons. At Zacapa inquiries were productive of no results. At Gualan a number of cases of fever, and 4 deaths were found, giving rise to grave suspicion. Later information was received of a case of sickness of a railroad employee which ultimately developed into a well-defined case of yellow fever, and on the 15th the Bureau was notified. Under previous instructions, Doctor Wailes again visited Gualan and found a number of sick in town, one with every indication of yellow fever. This case was also reported to the bureau. Doctor Wailes states he was convinced after further investigation of at least 7 cases with 1 death, and believes that at Zacapa conditions were worse.

During this period 31 vessels were dispatched, 13 clearing from Livingston after first touching at Barrios. Up to April 24 personal certificates were issued to 64 passengers. Since May 15 no passengers have been permitted to embark.

PUERTO CORTEZ, HONDURAS.

Season of 1906 (July 1 to October 31).—Seventy-two vessels were inspected, carrying 1,480 crew and 73 passengers, during this period.

Season of 1907 (April 1 to June 30).—Acting Asst. Surg. R. P. Ames reports the water supply of Puerto Cortez is rain water stored in cisterns and barrels, some of the containers being screened with No. 18 wire gauze. Under the military occupation, a board of health

was appointed, and an antimosquito campaign begun, the oiling squad consisting of a member of the board, the chief of police and Nicaraguan soldiers. The work was repeated every five days until the departure of the troops. The civil board of health has stated that the same antimosquito work and sanitary measures would be continued. Sanitary conditions and health of all towns and plantations in the consular district during this period were excellent. Estimated population of the district, 15,000. Fifty-nine vessels were inspected, carrying 1,378 crew and 97 passengers. Two vessels were fumigated.

CEIBA, HONDURAS.

Season of 1906 (July 1 to October 31.—Acting Asst. Surg. W. B. Robertson states the health of crews has been good: Some time previous to July 1 passenger traffic to New Orleans had been stopped by the Louisana State board of health. It was continued to Mobile until June 19, when the issuance of passenger certificates was stopped by him because of the sanitary condition of the port.

On August 19 Surgeon Guiteras, of the Service, traveling as expert, embarked for Mobile, by special permission. During October, near the close of the season, several passengers embarked by special permission.

Health conditions were bad with a rapid rise in the death rate early in July, and on July 20, Doctor Robertson found conditions which caused him to declare the existence of yellow fever. This was denied, and on August 17, Surgeon Guiteras, under orders from the bureau, arrived, and on August 19 declared the disease to be existent. The port was declared to be infected and from August 19 to close of season was so declared on all papers.

Doctor Robertson states that the fruit business is steadily increasing at Ceiba, thus having an important bearing on the health of the United States, while the best that can be said of the sanitary condition is that it is "indeterminate," being generally better than in former years, but much remaining to be done before it can be as it should.

Sixty-six vessels were inspected and passed; 48 steamers fumigated; 1,355 crew on steamers and 14 crew on sailing vessels inspected; 33 passengers on steamers inspected; and 50 pieces of baggage inspected and passed.

Season of 1907 (April 1 to June 30).—Acting Asst. Surg. V. C. Reynolds reports 55 steamers inspected and passed; 1 steamer disinfected; 2 sailing vessels inspected and passed; 1,169 crew on steamers and 13 crew on sailing vessels inspected; and 109 passengers on steamers inspected.

Vessels anchor from three-fourths to 2 miles from land while loading and fruit is taken out in small boats. Boarding is done at all hours, day and night, in boats furnished by the companies.

Passenger traffic consists mainly of commercial travelers, railroad employees, merchants, and a few natives visiting the United States.

Local officials have been active in carrying out measures for the betterment of health conditions. They have spent considerable money in these measures and are preparing to extend the work to adjacent villages and the cleaning out of a creek which drains the town. The erection of a new detention house has also been begun.

The health of crews has been uniformly good, and health conditions better than ever before known for the same season of the year. Malaria is always present, though not in severe form. It is usual to have many cases of fatal dysentery during this period, but none has been found this season. Doctor Reynolds states as a probable reason for this improved condition, that several hundred open wells have been filled and pumps driven deep for drinking water.

TELA, HONDURAS.

Season of 1906, (July 1 to October 31).—Acting Asst. Surg. C. K. Roe reports 42 steamers inspected, carrying 904 members of crew.

Season of 1907 (April 1 to June 30).—Forty-two steamers were inspected and passed, with 910 crew and 2 passengers.

Doctor Roe states that owing to martial law prevailing, the municipal authorities have not made any effort to improve the sanitary condition of Tela, but notwithstanding this, the health of the port has been remarkably good, there having been but 1 death in six weeks. Ships anchor in the open sea and discharge and take cargo by means of lighters.

BLUEFIELDS, NICARAGUA.

Season of 1906 (July 1 to October 31).—Thirty-five vessels were inspected and passed, with 637 crew and 229 passengers. One hundred and ten passengers and 250 laborers and 90 crew were vaccinated.

Doctor Layton states that on August 5 variola made its appearance in Bluefields and vicinity and during this period 6 cases occurred, the last on September 26. From the appearance of the disease the quarantine regulations were rigidly enforced. The personnel of every vessel was vaccinated, as well as all laborers. In the evening of October 9 a hurricane destroyed the banana industry of Nicaragua and from that date the vessels entering Bluefields to discharge freight sailed to some other fruit port for cargo. On October 16 the Louisiana health authorities refused to receive passengers from Bluefields via other ports, but upon the 19th of the month, three days later, the objection was withdrawn.

Doctor Layton also states that upon several occasions ships bound for Mexican, Central American, and South American ports, although not intending to enter the United States, were subjected to Service regulations while in Bluefields, and granted Service certificate at departure. This was done in compliance with requests of agents and masters, who stated that a Service certificate facilitated entry at other ports, especially in Mexico.

Pulmonary tuberculosis and malaria prevailed in Bluefields during this period, the latter of a very mild type.

Season of 1907 (April 1 to June 30).—Doctor Layton states that upon his arrival at Bluefields sanitary conditions were found to be satisfactory, there being no communicable disease, nor has any quarantinable disease existed during this period, with the exception of 3 mild cases of varicella. The port suffered from a water famine owing to a dry season of unusual duration. Twelve bills of health issued and 12 vessels inspected, with 270 crew, and 61 passengers.

PORT LIMON, COSTA RICA.

Season of 1906 (July 1 to October 31).—Acting Asst. Surg. D. W. Goodman reports 120 steamships, carrying 5,159 crew, 1,142 transit passengers, and 1,656 direct passengers were given bills of health. Of these 54 were fruit vessels bound for southern ports of the United States, and they were fumigated prior to sailing in accordance with regulation.

During this period there occurred in Port Limon 131 deaths, the population being about 5,000. Malaria, pneumonia, syphilis, and tuberculosis, in the order named, were the principal causes of death. There were 4 cases and 1 death of yellow fever, and though the port was infected on three separate occasions, no spread of the infection took place.

Season of 1907 (April 1 to June 30).—Doctor Goodman reports for this period, the sanitary condition of the town continued good. nearly all the streets being macadamized. the gutters made of cement, and both kept clean, by sweeping and flushing. Garbage is removed daily and premises kept clean. On the long piers at which ships lie, there is no exposed stagnant water, and consequently no mosquitoes, while there are very few in the town.

One hundred and five vessels carrying 4,656 crew and 1,528 passengers were inspected and furnished with bills of health. Twenty-seven bills of health for Panaman ports were countersigned. The principal causes of deaths were malaria, diseases of lungs, bowels and kidneys, in the order named.

BOCAS DEL TORO, PANAMA.

Season of 1906 (July 1 to October 31).—Doctor Osterhout reports 69 vessels inspected and 51 fumigated, carrying 2,101 crew and 17 passengers. Twenty-three pieces of baggage were inspected. No infectious or contagious disease appeared at the port during this period.

Season of 1907 (April 1 to June 30).—No infectious or contagious disease appeared at the port during this period, nor has any such disease appeared for more than one year. The sanitation is under direction of the Isthmian Canal Commission, and the local quarantine service is also under its observation, a reliable service being maintained.

Sanitary work in the port has been pushed vigorously.

Sixty-four vessels were inspected, with 1,743 crew and 118 passengers.

SANTA MARTA, COLOMBIA.

Season of 1907 (April 1 to June 30).—Acting Assistant Surgeon Mengis reports that Santa Marta has a population of about 5,000 and is situated in the Manzanares Valley between two mountain ranges. The town is supplied with water, through a viaduct and reservoir. from the Manzanares River. There are no cistern nor tanks.

The wharf is about one-half mile from the town with no houses between. The prevailing diseases are malaria, in all its phases, and influenza, one imported case of smallpox also occurring.

Thirty steamers were inspected and 1 sailing vessel, with a total of 1,311 crew and 198 passengers.

Domestic Quarantine.

YELLOW FEVER AT NEW IBERIA, LA.

Information having reached the bureau of a case of yellow fever at New Iberia, La., Surg. G. M. Guiteras was, upon August 23, 1906, instructed by wire to proceed to New Iberia.

Surgeon Guiteras reports that upon his arrival on the afternoon of August 25, he was taken by one of the local physicians to see the case which had been reported as suspicious. The patient then had been ill for eleven days, and the history of the case and its appearance made it clear that the patient was convalescing from an attack of yellow fever. The diagnosis had been made by the attending physician on the third day.

Doctor Guiteras says of the sanitary measures taken, that the house was screened and fumigated under direction of the State health officer and the surrounding territory quarantined and guarded. A systematic fumigation was done of the entire city commencing with the infected district, which district was also daily inspected for suspicious cases. No travel out of the city was permitted. There was, on account of these measures, a remarkable absence of excitement, and the medical profession cooperated cordially in the work.

Sulphurous oxide gas and campho-phenique were the insecticides used, about 80 per cent of the work being done with the former.

The origin of the case was not determined and there was no spread of the disease.

NEW QUARANTINE STATIONS.

South Carolina.—On October 1, 1906, the Service assumed charge of the four quarantine stations formerly operated by the State of South Carolina. These stations are situated, respectively, at or near the ports of Georgetown, Charleston, Beaufort, and Port Royal. Extensive repairs to the station at Charleston have been undertaken, and are at this time about completed. Among the items are a new disinfection and landing wharf, repairs to ballast wharf, and renovation and repairs to the various buildings of the station, viz, medical officer's quarters, crews' detention building, disinfecting building, etc. Minor running repairs have been made at the other stations.

Mobile, Ala.—The service assumed charge of the station, situated near the mouth of Mobile Bay, on March 18, 1907, and under date of April 1, 1907, a medical officer of the service and a pharmacist were assigned to duty. The station had suffered extensive damage during the hurricane of September 26, 1906. These damages have been repaired and the station largely rehabilitated. New quarters and a new hospital have been constructed, and a boathouse provided; the attendants' quarters have been restored, and wharves and gangways replaced. Arrangements have been perfected to provide new detention quarters for crews and passengers, a new administration building and quarters for pharmacist, lighting plant and water supply, and by the opening of the next quarantine season it is expected that the station will be fully equipped in every particular.

New Orleans, La.—The New Orleans Quarantine Station and its substation near the mouth of the Mississippi River, and the stations at Rigolettes, Atchafalaya, Lake Charles, and Lake Borgne, formerly operated by the State of Louisiana, passed under the charge of the Service on April 1, 1907, having been sold to the National Government under the provisions of the act of Congress, approved June 19, 1906. Owing to informalities in the act of the legislature of Louisiana authorizing the sale of the stations by the governor, title to the various stations and their equipment has not as yet been completed, and no permanent improvements, necessitated by their condition at the time of transfer, have as yet been made. The quarantine function has, however, been discharged at the various stations in a highly satisfactory manner, and all necessary additions for the maintenance of the improvement of the principal station have been made. A special session of the legislature has been called by the governor during which the informalities will be corrected, and as soon as title has been satisfactorily made the improvements and final equipment of the station will be proceeded with.

Brunswick, Ga.—On April 1, 1907, condemnation proceedings of the site of this station were concluded and a title obtained. The station will therefore in the future be conducted on a national instead of a leased site, and needed improvements will be made in the near future.

TEXAS QUARANTINE STATIONS.

Under the provisions of the act of Congress, approved June 19, 1906, an appraisement of the value of the various quarantine stations operated by the State of Texas, was made, and an offer was made to the governor for the purchase of the said stations. The governor recommended to the legislature, then in session, the enactment of the necessary legislation to legalize the transfer, but adjournment took place without any action in the premises. In view of this fact a board was convened by direction of the Secretary of the Treasury, consisting of an officer of the Service, an officer of the Revenue-Cutter Service and the collector of customs at the port of Galveston to select a site for a quarantine station in the harbor of Galveston. The board selected a site, and the necessary authority was obtained from the War Department for the erection of the desired pier, and the creation of an artificial island, large enough to afford a site for the desired buildings. Steps are now being taken to secure the necessary title and cession of jurisdiction to the submerged lands upon which the station will be situated, and when the necessary legal formalities have been complied with, the construction of the station will be undertaken upon lines and plans already determined upon.

THE NATIONAL QUARANTINE STATIONS.

During the fiscal year ending June 30, 1907, at the various quarantine stations of the United States a total of 6,465 vessels, 4,466 steam and 1,999 sail, were inspected and passed. Of this number 534 were disinfected or fumigated for the destruction of mosquitoes.

In addition to the vessels inspected and passed, 1,216 vessels were spoken and passed, making a grand total of 7,681 vessels passing

under the observation of the service, at the stations in the continental United States.

Following are summaries of the work done at national maritime quarantine stations.

Eastport, Me., quarantine.—Post-office and telegraphic address, Eastport, Me. Acting Asst. Surg. E. M. Small in charge.

Sixty-three sailing vessels and 942 steamers were inspected and passed; and 383 crew on sailing vessels, 22,884 crew on steamers, and 35,429 passengers on steamers were inspected.

Portland quarantine.—Post-office and telegraphic address, Portland, Me. Surg. P. C. Kalloch in command, under orders of December 21, 1901.

Seven sailing vessels and 84 steamers were inspected and passed; and 6,606 crew on steamers, 102 crew on sailing vessels, 6,052 passengers on steamers, and 24 passengers on sailing vessels were inspected.

Perth Amboy quarantine.—Post-office and telegraphic address, Perth Amboy, N. J. Asst. Surg. E. H. Mullan in command, under orders of November 23, 1906.

Eight sailing vessels and 34 steamers were inspected and passed; 11 steamers disinfected; and 886 crew on steamers and 64 crew on sailing vessels inspected.

Reedy Island quarantine.—Post-office address, Port Penn, Del., and telegraphic address, Reedy Island, Delaware. Passed Asst. Surg. W. A. Korn in command, under orders of September 14, 1906.

One hundred and forty-one sailing vessels and 1,057 steamers were inspected and passed; 4 steamers disinfected; and 40,350 crew on steamers, 1,592 crew on sailing vessels, 35,761 passengers on steamers, and 29 passengers on sailing vessels inspected. The steamships disinfected were the *Russian Prince*, on account of suspected yellow fever; the *Kybfels*, on account of a suspected case of plague; the *Oswestry*, on account of smallpox, and the *Peter Jebsen*, on account of suspected yellow fever. In addition the steamships *Liv* and *Britannic*, each bound from Philadelphia for Norfolk, were fumigated upon request.

Five vessels from tropical ports were detained to complete a period of five days from port of departure; glandular examinations were made of the crews of 37 vessels; and temperatures taken of crews of 43 vessels.

Delaware Breakwater quarantine.—Post-office and telegraphic address, Lewes, Del. Acting Asst. Surg. B. G. Adamson in charge.

Eighty-one steamers and 44 sailing vessels were inspected and passed: one steamer disinfected; and 2,336 crew on steamers, 557 crew on sailing vessels, 57 passengers on steamers, and 32 passengers on sailing vessels inspected.

Alexandria, Va., quarantine.—Post-office and telegraphic address, Alexandria, Va. Acting Asst. Surg. Arthur Snowden in charge.

Nine sailing vessels, with 78 crew and 1 passenger, were inspected and passed.

Cape Charles quarantine.—Post-office and telegraphic address, Fort Monroe, Va. Asst. Surg. G. L. Collins in command, under orders of March 14, 1906.

Eight vessels were spoken and passed; 381 steamers and 15 sailing vessels inspected and passed; 58 steamers and 1 sailing vessel disin-

fected; and 38,586 crew on steamers, 149 crew on sailing vessels, and 3,025 passengers on steamers inspected.

Cape Fear quarantine.—Post-office and telegraphic address, Southport, N. C. Passed Asst. Surg. E. K. Sprague in command, under orders of January 9, 1906.

Eighty-six vessels were spoken and passed; 19 steamers and eleven sailing vessels inspected and passed; two steamers and three sailing vessels disinfected; and 485 crew on steamers, 125 crew on sailing vessels, and three passengers on sailing vessels inspected.

Until May 1, 1907, vessels could enter Cape Fear River without a pilot and the captains were free to exercise their judgment as to quarantine until met by customs officials. In order to avoid the necessity of return to quarantine, as many vessels as possible were spoken.

The vessels disinfected were from Bahia, Portobello, Santos, Rio, and Barbados.

Charleston quarantine.—Post-office and telegraphic address, Charleston, S. C. Passed Asst. Surg. B. H. Earle in command, under orders of September 10, 1906.

Four vessels were spoken and passed; 92 steamers and five sailing vessels were inspected and passed; and 2,383 crew on steamers, 49 crew on sailing vessels, and 721 passengers on steamers were inspected.

The quarantine function at this station was assumed by the Service on September 24, 1906, under the quarantine act of June 19, 1906.

Georgetown quarantine.—Post-office and telegraphic address, Georgetown, S. C. Acting Asst. Surg. J. William Folk, in charge.

Two sailing vessels were inspected and passed, with 16 crew on board.

The Service assumed the quarantine function at this station on October 1, 1906, under the quarantine act of June 19, 1906.

Beaufort quarantine.—Post-office and telegraphic address, Beaufort, S. C. Acting Asst. Surg. C. G. Hay in charge.

Four vessels were spoken and passed; 5 steamers and 1 sailing vessel inspected and passed; 1 steamer disinfected; and 133 crew on steamers, 9 crew on sailing vessels, and 1 passenger on sailing vessel inspected.

The Service assumed the quarantine function at this station on October 1, 1906, under the quarantine act of June 19, 1906.

Port Royal quarantine.—Post-office and telegraphic address, Port Royal, S. C. Acting Asst. Surg. W. P. Gibbs in charge.

There were no quarantine transactions at this station. The Service assumed the quarantine function October 1, 1906, under the quarantine act of June 19, 1906.

Savannah quarantine.—Post-office and telegraphic address, Savannah, Ga. Acting Asst. Surg. William J. Linley in charge.

Two hundred and seventy-seven vessels arrived; 109 were spoken and passed; 152 inspected and passed; 11 fumigated and released; 1 fumigated and held 4 days; 1 fumigated and held 5 days; 2 held for instructions and released by order of the Bureau; and one held 6 hours and released. Fifty-four passengers and 4,497 seamen were inspected. Seventeen vessels, disinfected immediately prior to departure from the foreign port, arrived from yellow fever ports, of which 13 were inspected and passed, and 4 fumigated and released.

South Atlantic quarantine.—Post-office address, Inverness, Ga. Telegraphic address, Darien Ga. Passed Asst. Surg. M. K. Gwyn in command, under orders of May 24, 1905.

Eighteen steamers and 2 sailing vessels were inspected and passed; 1 steamer and 1 sailing vessel disinfected; and 448 crew on steamers and 37 crew on sailing vessels inspected.

One sailing vessel was remanded from Brunswick quarantine for treatment on account of yellow fever. Assistance was also rendered the crew of the bark *Medbor*, and to a German steamer which went aground.

Brunswick quarantine.—Post-office and telegraphic address, Brunswick, Ga. Assistant Surg. R. D. Spratt in command, under orders of February 21, 1906.

Thirty-four vessels were spoken and passed; 43 steamers and 44 sailing vessels inspected and passed; 1 steamer and 12 sailing vessels disinfected; and 1,443 crew on steamers, 565 crew on sailing vessels, 428 passengers on steamers and 6 passengers on sailing vessels inspected. One case of yellow fever arrived and the vessel was remanded to South Atlantic quarantine.

Tampa Bay quarantine.—Post-office address, Fort de Soto, Fla. Telegraphic address, Tampa, Fla. Passed Asst. Surg. T. D. Berry in command, under orders of December 27, 1905.

Nine vessels were spoken and passed; 54 steamers and 66 sailing vessels inspected; 29 steamers and 23 sailing vessels disinfected; and 2,326 crew on steamers, 699 crew on sailing vessels, and 994 passengers inspected.

The work of this station is largely influenced by health conditions in Cuba.

Cumberland Sound quarantine.—Post-office and telegraphic address, Fernandina, Fla. Acting Asst. Surg. J. L. Horsey in charge.

One hundred and eleven vessels were spoken and passed; 80 steamers and 39 sailing vessels inspected and passed; five steamers and three sailing vessels disinfected; and 2,347 crew on steamers, 1,534 crew on sailing vessels, six passengers on steamers, and 28 passengers on sailing vessels inspected.

St. John's River inspection station.—Post-office and telegraphic address, Mayport, Fla. Acting Asst. Surg. George Macaulay in charge.

Three hundred and thirty-four vessels were spoken and passed; 19 steamers and 45 sailing vessels inspected and passed; 6 sailing vessels disinfected; and 1,215 crew on steamers, 1,632 crew on sailing vessels, and 87 passengers on steamers and 46 passengers on sailing vessels inspected.

Key West quarantine.—Post-office and telegraphic address, Key West, Fla. Acting Asst. Surg. S. D. W. Light in charge.

Two hundred and sixty-one steamers and 70 sailing vessels were inspected and passed; 9 steamers and 1 sailing vessel disinfected; and 16,470 crew on steamers, 521 crew on sailing vessels, 14,237 passengers on steamers, and 311 passengers on sailing vessels inspected.

Boca Grande quarantine.—Post-office and telegraphic address, Punta Gorda, Fla. Acting Asst. Surg. W. Barnes in charge.

Twenty-seven vessels were spoken and passed; and 3 steamers and two sailing vessels inspected and passed.

St. George Sound quarantine (East and West Pass).—Post-office and telegraphic address, Carrabelle, Fla. Acting Asst. Surg. B. B. Blount in charge.

Fifty-one sailing vessels and two steam vessels were inspected and passed; and 479 crew on sailing vessels and 44 crew on steam vessels inspected.

Santa Rosa quarantine.—Post-office and telegraphic address, Pensacola, Fla. Acting Asst. Surg. R. C. White in charge.

Five vessels were spoken and passed; 33 boarded and passed; 164 steamers and 82 sailing vessels inspected and passed; 27 steamers and 15 sailing vessels disinfected; and 5,834 crew on steamers and 1,414 crew on sailing vessels, and 45 passengers on steamers and 21 passengers on sailing vessels inspected. This report is incomplete owing to loss of station record of transactions for week ending September 29, 1906.

This station was practically demolished by a tropical hurricane of September 26–27, 1906, being swept by waves to the depth of 10 to 12 feet. Since the storm, contracts have been let for the rehabilitation of the station, a sufficient sum having been appropriated for the purpose.

Biscayne Bay quarantine.—Post-office and telegraphic address, Miami, Fla. Acting Asst. Surg. James M. Jackson, jr., in charge.

Four hundred and forty-seven vessels were spoken and passed; 41 steamers and 72 sailing vessels inspected and passed; and 2,009 crew on steamers, 447 crew on sailing vessels, 1,762 passengers on steamers, and 1,245 passengers on sailing vessels inspected.

Port Inglis quarantine.—Post-office and telegraphic address, Dunnellon, Fla. Sanitary Inspector William Griffith in charge.

Forty steamers from foreign ports, 20 steamers from domestic ports, and 5 sailing vessels from foreign ports entered. Two vessels were held in quarantine for expiration of quarantine period, and 1 vessel was sent to Tampa Bay quarantine for fumigation.

Cedar Keys quarantine.—Post-office and telegraphic address, Cedar Keys, Fla. Acting Asst. Surg. R. T. Walker in charge. There were no quarantine transactions at this station.

Mobile quarantine.—Post-office address, Fort Morgan, Ala. Telegraphic address, Mobile, Ala., thence by wireless. Passed Asst. Surg. Edward Francis in command, under orders of April 1, 1907.

Seventy-four sailing vessels and 139 steamers were inspected; 34 vessels disinfected; 13 vessels detained; and 3,258 crew on steamers, 208 crew on sailing vessels, and 208 passengers on steamers inspected; and 13 cases of typhoid fever and 7 cases of malarial fever removed from vessels. No case of quarantinable disease was discovered.

On April 29, 1907, the steamship *Harald* arrived from Ceiba, with one sailor ill with typhoid fever, which on arrival at Mobile created suspicion. The vessel was remanded to quarantine and disinfected as a precautionary measure. On her next trip, she arrived with three men down with typhoid fever and was thoroughly cleaned. This vessel has arrived since at the station without recurrence of typhoid.

The quarantine function at this station was assumed by the Service upon March 18, 1907, under the quarantine act of June 19, 1906.

Pascagoula quarantine.—Post-office and telegraphic address, Pascagoula, Miss. Acting Asst. Surg. B. F. Duke in charge.

Four vessels were spoken and passed; 1 steamer and 6 sailing vessels inspected and passed; and 32 crew on steamers, 76 crew on sailing vessels, and 15 passengers on sailing vessels were inspected.

New Orleans quarantine (and subports Port Eads inspection station, Rigolettes, Atchafalaya, Lake Charles, and Lake Borgne).—Post-office address, Quarantine, La. Telegraphic address, New Orleans, La. Passed Asst. Surg. R. H. von Ezdorf in command, under orders of March 16, 1907.

The Service assumed the quarantine function at these stations on April 1, 1907, under the quarantine act of June 19, 1906.

At New Orleans quarantine 251 vessels arrived; 138 vessels were inspected and passed; 113 vessels treated; 20 vessels fumigated and detained to complete five days from date of fumigation at port of departure; 12 vessels fumigated and released; 17 vessels disinfected and held; 7 vessels released; and 7,901 crew, and 2,573 passengers inspected; and 7 passengers detained at barracks, with 46 patients treated at hospital.

At Port Eads inspection station 60 vessels were inspected and passed; 144 vessels inspected and remanded to New Orleans quarantine; and 1,962 crew and 82 passengers inspected and passed.

All vessels entering the river between sunrise and sunset are inspected at Port Eads. The result of the inspection of vessels is telephoned to New Orleans quarantine.

Gulf quarantine.—Post-office and telegraphic address, Biloxi, Miss. Passed Asst. Surg. C. W. Wille in command, under orders of March 24, 1905.

Twenty-seven vessels were spoken and passed; 75 steamers and 103 sailing vessels inspected and passed; 10 steamers and 80 sailing vessels disinfected; and 2,091 crew on steamers, 2,107 crew on sailing vessels, 23 passengers on steamers, and 31 passengers on sailing vessels inspected.

This station suffered severely by reason of a hurricane of September 26–27, 1906. All floating property, except small boats, was swept away and many buildings practically destroyed. Provision has been made for the rehabilitation of the station, which is now in progress.

San Diego quarantine.—Post-office and telegraphic address, San Diego, Cal. Acting Asst. Surg. W. W. McKay in charge.

One vessel was spoken and passed; 148 steamers and 11 sailing vessels inspected and passed; 1 steamer fumigated to kill mosquitoes; and 5,604 crew on steamers, 170 crew on sailing vessels, 3,004 passengers on steamers, and 2 passengers on sailing vessels inspected.

Los Angeles quarantine (and subports, Port Los Angeles, San Pedro, and Santa Barbara).—Surg. S. D. Brooks in command, under orders of March 28, 1907.

A total of 37 vessels was inspected, all of which were passed.

Port Harford quarantine.—Post-office and telegraphic address, Port Harford, Cal. Acting Asst. Surg. C. J. McGovern in charge.

Five sailing vessels and 12 steamers were inspected and passed.

San Francisco quarantine.—Post-office and telegraphic address, Angel Island, Cal. Passed Asst. Surg. W. C. Hobdy in command, under orders of January 26, 1906.

Six vessels were spoken and passed; 86 vessels boarded and passed; 385 steamers and 231 sailing vessels inspected and passed; 18 steamers and 7 sailing vessels disinfected; and 38,881 crew on steamers, 5,199

crew on sailing vessels, 48,711 passengers on steamers, and 196 passengers on sailing vessels inspected. Seventy-one vessels were from yellow fever ports, 309 from plague and cholera ports, and 3 vessels were held for diagnosis.

Eureka quarantine.—Post-office and telegraphic address, Eureka, Cal. Acting Asst. Surg. C. C. Falk in charge.

Four steamers and 12 sailing vessels were inspected and passed, with a total of 288 crew and 7 passengers.

Columbia River quarantine (and Oregon subports, Marshfield, Newport, Florence, and Gardner).—Post-office and telegraphic address, Astoria, Oreg. Passed Asst. Surg. J. M. Holt in command, under orders of September 14, 1906.

Forty-two steamers and 76 sailing vessels were inspected and passed; 2,086 crew on steamers, 1,992 crew on sailing vessels, 19 passengers on steamers, and 396 passengers on sailing vessels inspected.

Port Townsend quarantine (and subports, Port Angeles and South Bend, Wash.).—Post-office and telegraphic address, Port Townsend, Wash. Passed Asst. Surg. J. H. Oakley in command, under orders of May 28, 1903.

One hundred and forty-two sailing vessels and 163 steamers were inspected and passed; 1 steamer and 11 sailing vessels disinfected; and 15,430 crew on steamers, 3,280 crew on sailing vessels, 21,745 passengers on steamers, and 91 passengers on sailing vessels inspected.

Grays Harbor quarantine.—Post-office and telegraphic address, Hoquiam, Wash. Acting Asst. Surg. T. C. Frary in charge. Twenty-seven sailing vessels were inspected and passed with 298 crew and 19 passengers.

TEXAS-MEXICAN BORDER QUARANTINE.

The work along this border at El Paso, Eagle Pass, and Laredo has been continued. The effect of the work is to expedite travel, to permit the operation of through trains between Mexican and United States points, and to prevent annoying detention of passengers where not necessary for protection of public health.

PERSONNEL.

COMMISSIONED OFFICERS.

The commissioned medical officers at the beginning of the fiscal year July 1, 1906, numbered 118, as follows: The Surgeon-General, 5 assistant surgeons-general, 28 surgeons, 56 passed assistant surgeons, and 28 assistant surgeons.

Three commissioned medical officers continued on detailed duty to the Isthmian Canal Commission, Canal Zone, serving respectively as director of hospitals, Canal Zone, as chief quarantine officer, and quarantine officer, Cristobal and Colon.

Twenty commissioned medical officers are assigned to exclusive immigration duty for the physical and mental examination of aliens, their services being supplemented by employment of acting assistant surgeons.

Eight commissioned medical officers are detailed to the quarantine service of the Philippine Islands.

Six commissioned medical officers are detailed for service upon vessels of the Revenue-Cutter Service.

One commissioned medical officer is detailed as sanitary director at the Jamestown Exposition.

Seventeen commissioned medical officers are detailed at the several quarantine stations in the continental United States, in Porto Rico, and the Hawaiian Islands.

Four passed assistant surgeons and two assistant surgeons are assigned to duty in foreign countries to prevent the introduction into the United States of contagious or epidemic diseases.

One assistant surgeon was promoted to the grade of passed assistant surgeon, and 7 assistant surgeons were commissioned during the year. The number remaining in the Service June 30, 1907, were the Surgeon-General, 5 assistant surgeons-general, 28 surgeons, 57 passed assistant surgeons, and 34 assistant surgeons; total, 125.

NONCOMMISSIONED OFFICERS.

Sanitary inspectors.—Three sanitary inspectors served during the entire year.

Acting assistant surgeons.—At the beginning of the fiscal year there were 205 acting assistant surgeons on duty; 231 were appointed, 4 died, 177 were separated from the Service by limitation of appointments, resignations, and removals, leaving on duty at the close of the fiscal year 255 such officers.

Medical inspectors.—Two female medical inspectors served during the entire year for the inspection of women passengers, 1 at Honolulu, Hawaii, and 1 at San Francisco quarantine station.

Internes.—At the beginning of the fiscal year there were 10 internes on duty at the various marine-hospital stations; 8 were appointed, and 10 separated from the Service by reason of resignation, leaving 8 on duty at the close of the fiscal year.

Pharmacists.—At the beginning of the fiscal year there were on duty 45 pharmacists, divided as follows: Pharmacists of the first class, 15; second class, 21; third class, 9. One pharmacist of the first class died; 1 pharmacist, second class, was removed; 1 pharmacist, second class, and one of the third class, resigned. Two pharmacists of the second class were promoted to pharmacists of the first class, 5 of the third class were promoted to the second class, and 6 appointments were made to the position of pharmacist of the third class, which, together with promotions to fill vacancies caused by death, resignations, and removals, as above, leaves 47 pharmacists on duty at the close of the fiscal year, as follows: Pharmacists of the first class, 16; second class, 22; third class, 9.

Pilots and marine engineers.—At the beginning of the fiscal year there were on duty 10 pilots and 18 marine engineers. Two pilots resigned, 1 was removed, and 5 were appointed. Six marine engineers were separated from the Service and 9 were appointed. The number on duty at the close of the fiscal year is as follows: Pilots, 10; marine engineers, 21.

HOSPITAL AND QUARANTINE ATTENDANTS.

At the beginning of the fiscal year 659 attendants were employed at the various marine hospitals, quarantine stations, and on epidemic duty, not including 76 such employees on duty in the Philippine Islands, and at the close of the fiscal year there were 744 so employed, as follows:

Branch of service in which employed.	In service July 1, 1906.	Appointed during year.	Separated from service.	In service June 30, 1907.
Marine-Hospital Service	421	1,068	1,061	428
Quarantine (including Porto Rico and Hawaii)	216	374	307	283
Epidemic	22	39	28	33
Total	659	1,481	1,396	744
Philippine Islands	76	23	25	74

RECAPITULATION.

Commissioned medical officers	125
Chiefs of divisions, hygienic laboratory	3
Sanitary inspectors	3
Acting assistant surgeons	255
Medical inspectors	2
Internes	8
Pharmacists	47
Pilots	12
Marine engineers	21
Attendants	818
Total	1,294

BOARDS CONVENED.

Thirty-nine boards were convened at different times and at various stations throughout the United States for the physical examination of officers of the Revenue-Cutter Service and applicants for entrance therein. Two boards were convened for the examination of assistant surgeons to determine their fitness for promotion to the grade of passed assistant surgeon. Two were convened to examine officers of the Service to determine whether their physical condition was such as to entitle them to be placed on "waiting orders." Nine for the physical examination of detained aliens. Seven for the examination of pharmacists to determine their fitness for promotion to a higher grade. Two for the examination of applicants for entrance as assistant surgeons. Eight officers were assigned to duty on Revenue-Cutter Service retiring boards. Two officers were assigned to temporary duty at the Government Hospital for the Insane, at Washington, D. C.

OFFICERS DETAILED TO REPRESENT THE SERVICE AT MEETINGS OF MEDICAL AND PUBLIC HEALTH ASSOCIATIONS.

Asst. Surg. Gen. J. W. Kerr: Meeting American Medical Association, at Atlantic City, N. J., June 4 to 8, 1907.

Surg. D. A. Carmichael: Meeting of Association of Military Surgeons, at Buffalo, N. Y., September 11 to 14, 1906.

Surg. P. M. Carrington: Meeting of the National Association for the Study and Prevention of Tuberculosis, at Washington, D. C., May 6 to 8, 1907; Twenty-fourth Annual Meeting of the American Climatological Association, at Washington, D. C., May 9, 1907.

Surg. R. M. Woodward: Meeting of the House of Delegates of the American Medical Association, at Atlantic City, N. J., June 3 to 8, 1907.

Surg. C. P. Wertenbaker: Meeting of the Association of Military Surgeons, at Buffalo, N. Y., September 11 to 14, 1906.

Passed Asst. Surg. M. J. Rosenau; Meeting of the Society of American Bacteriologists, at New York, N. Y., December 28 and 29, 1906; American Medical Association, at Atlantic City, N. J., June 4 to 8, 1907.

Passed Asst. Surg. W. C. Hobdy: Semiannual meeting of the California Public Health Association, at San Jose, Cal., October 10, 1906.

Asst. Surg. W. C. Rucker: Meeting of the Association of Military Surgeons, at Buffalo, N. Y., September 11 to 14, 1906.

Ch. W. Stiles, Chief Division Zoology, Hygienic Laboratory: Meeting of the Association for the Advancement of Science, at New York, N. Y., December 28 and 29, 1906.

R. Hunt, chief division pharmacology, Hygienic Laboratory: Fifty-fourth Annual Meeting of the American Pharmaceutical Association, at Indianapolis, Ind., September 3, 1906.

Pharmacist A. M. Roehrig: Fifty-fourth Annual Meeting of the American Pharmaceutical Association, at Indianapolis, Ind., September 3, 1906.

RETIRED OFFICERS OF THE REVENUE-CUTTER SERVICE NOT ENTITLED TO TREATMENT.

(Decision of the Comptroller of the Treasury.)

WASHINGTON, *May 21, 1907.*

SIR: In your communication of May 1, 1907, you request my decision of certain questions presented in a communication addressed to you by the Acting Surgeon-General of the Public Health and Marine-Hospital Service, dated April 27, 1907, as follows:

"I have the honor to acknowledge receipt of your communication of the 19th instant inclosing a copy of letter from Capt. C. F. Shoemaker, United States Revenue-Cutter Service (retired), in which he requests that this Service provide him with an artificial leg. There was also inclosed in said communication a copy of letter from the Comptroller of the Treasury, in which he states that the cost of furnishing the artificial limb in question would be payable from the appropriation for the Public Health and Marine-Hospital Service if Captain Shoemaker was a patient of the Service. Before any action is taken by this Bureau, upon the request of Captain Shoemaker I have the honor to request that the Comptroller of the Treasury be called upon to furnish this bureau a decision upon the following, viz:

"First. Whether a retired officer of the Revenue-Cutter Service is entitled to treatment—medical, surgical, or hospital—by the Public Health and Marine-Hospital Service?

"Second. Whether an officer of the Revenue-Cutter Service who employs an outside physician is entitled to have the expenses incurred by him during his illness paid from the appropriation of the Public Health and Marine-Hospital Service?

"Third. Whether an officer of the Revenue-Cutter Service, not at present suffering from a disease or injury requiring medical or hospital treatment, is entitled to an artificial leg, eyeglasses, or other similar appliances, payable from the appropriation Public Health and Marine-Hospital Service?"

Paragraph 444 of the Regulations of the Public Health and Marine-Hospital Service provides that officers and crews of the Revenue-Cutter Service will receive hospital or outpatient treatment on certificate signed by the "commanding officer of a revenue cutter," and that officers "on leave, or on waiting orders, or on shore duty," may sign their own certificates. These provisions apply in terms only to officers on active duty, and imply that officers who have been retired are not entitled to such treatment.

Section 3 of the act of April 12, 1902 (32 Stat., 100), provides that commissioned officers of the Revenue-Cutter Service shall "receive the same pay and allowances," except forage, as provided by law for officers of the Army. In 7 Comp. Dec., 91–92, it was held that medical attendance for officers of the Army is in the nature of an allowance, and that a retired officer of the Army who is detailed as a professor at an educational institution is not entitled to such allowance. It was also said therein:

"An officer of the Army on the active list is not entitled to medical attention from private sources except when he is on duty at a place where the attendance of a medical officer can not be had (par. 1452, A. R., 1898) and no reason is seen why a retired officer not on duty should be in a better position."

In view of these considerations I am of opinion that retired officers of the Revenue-Cutter Service are not entitled to receive the hospital or outpatient treatment which the regulations provide that officers and crews of the Revenue-Cutter Service should be entitled to receive.

In view of this conclusion it appears to be unnecessary for me to render a decision upon the second and third questions presented in the communication of the Acting Surgeon-General in this case.

Respectfuly,

R. J. Tracewell, *Comptroller.*

The Secretary of the Treasury.

Accounts.

VOUCHERS PASSED FOR PAYMENT AND SETTLEMENT.

The records of the bureau show that 16,377 vouchers were passed during the year. Of this number, 14,628 were sent to the disbursing clerk for payment, 964 were transmitted to the Auditor for the Treasury Department for examination and settlement, and 785 were examined and referred to the Auditor, they having previously been paid by special disbursing agents of the Service.

FINANCIAL STATEMENT—RECEIPTS AND EXPENDITURES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, FOR THE FISCAL YEAR ENDED JUNE 30, 1907.

Public Health and Marine-Hospital Service, 1907.

		Appropriations and repayments.	Expenditures.	Balances June 30, 1907.
Pay and commutation, commissioned officers and pharmacists		$335,000.00	$272,113.65	$62,886.35
Pay, other employees		290,000.00	277,392.62	12,607.38
Freight and traveling expenses:				
Appropriation	$30,000.00			
Repayments	50.94			
		30,050.94	22,802.65	7,248.29
Fuel, light, and water:				
Appropriation	$70,000.00			
Repayments	82.14			
		70,082.14	63,248.38	6,833.76
Furniture and repairs		9,000.00	7,809.43	1,190.57
Purveying depot purchases:				
Appropriation	$27,250.00			
Repayments	4,808.38			
		32,058.38	31,505.69	552.69
Rent, purveying depot		3,250.00	3,250.00	
Maintaining Hygienic Laboratory		15,000.00	8,685.98	6,314.02
Maintenance marine-hospital stations:				
Appropriation	$240,000.00			
Repayments	10,423.56			
		250,423.56	194,227.66	56,195.90
Care of seamen, and other purposes:				
Appropriation	$165,000.00			
Repayments	993.78			
		165,993.78	125,260.34	40,733.44
Bureau, books		500.00	466.55	33.45
Total:				
Appropriation	$1,185,000.00			
Repayments	16,358.80			
		1,201,358.80	[a]1,006,762.95	194,595.85

[a] $111,483.24 included on account of Immigration Service.

Outstanding liabilities estimated, $24,655.02.

Quarantine service, 1907.

Amount of appropriation	$340,000.00
Repayments, subsistence furnished, etc	466.16
Total	340,466.16
Expenditures	318,740.04
Balance June 30, 1907	21,726.12

Outstanding liabilities (estimated), $14,295.31.

Expenditures by stations.

Name of station.	Pay and allowance of officers and employees.	Subsistence and miscellaneous.	Medical and hospital supplies.	Total.
Biscayne Bay	$3,782.33	$507.99		$4,290.32
Boca Grande	3,098.34	94.62	$20.40	3,213.36
Brunswick	3,068.33	1,847.70	56.29	4,972.32
Cape Charles	9,208.88	7,823.10	103.66	17,130.64
Cape Fear	6,310.00	1,680.41	111.96	8,102.37
Cedar Keys	729.00			729.00
Columbia River	9,788.07	5,065.69	208.78	15,062.54
Cumberland Sound	4,140.00	87.45	10.78	4,238.23
Delaware Breakwater	4,996.49	2,539.86	100.28	7,636.63
Eureka, Cal	907.50	472.24	2.48	1,382.22
Gulf	12,243.82	10,492.74	95.53	22,832.09
Hawaii	26,713.24	9,724.31	4.66	36,442.21
Key West	3,950.00	531.45		4,481.45
Los Angeles, Cal	105.00	72.45		177.45
Miscellaneous		576.56		576.56
Perth Amboy	2,215.87	913.06	16.18	3,145.11
Port Inglis, Fla	450.00			450.00
Portland, Me	6,440.00	582.31	28.05	7,050.36
Porto Rico	21,687.18	7,648.92	80.83	29,416.93
Port Townsend	12,276.83	1,346.36	20.26	13,643.45
Punta Rassa, Fla	300.00	4.50	3.04	307.54
Reedy Island	13,856.33	11,899.71	384.64	26,140.68
St. Georges Sound	3,060.00	268.84		3,328.84
St. Johns River	1,920.00	432.66	2.09	2,354.75
San Diego	4,890.00	2,432.67	40.77	7,363.44
San Francisco	25,926.78	21,798.47	643.37	48,368.62
Santa Rosa	7,409.50	1,709.10	244.50	9,363.10
Savannah	11,462.67	6,092.44	30.69	17,585.80
South Atlantic	6,437.17	2,738.96	63.63	9,239.76
Tampa Bay	6,175.00	3,355.08	184.19	9,714.27
Total	213,543.33	102,739.65	2,457.06	318,740.04

Preventing the spread of epidemic diseases.

Balance July 1, 1906		$297,453.04
Amount appropriated by Congress		200,000.00
Total		497,453.04
Expenditures:		
Foreign medical service, salaries, and miscellaneous—China, Japan, Italy, etc., Central and South America and West Indies	$48,017.32	
Panama and Canal Zone, salaries, etc	10,517.70	
Habana, Cuba (including outlying district), salaries, subsistence, supplies, and miscellaneous	21,836.29	
Mexico, salaries, supplies, etc	3,199.22	
Sanitary inspection in United States, salaries, traveling expenses, and miscellaneous	8,711.51	
Yellow fever, maintenance of detention camps, precaution against outbreak, salaries, medical and hospital supplies, disinfectants, etc	20,218.17	
Texas border inspection, salaries, and miscellaneous	5,149.66	
		117,649.87
Balance June 30, 1907		379,803.17

Outstanding liabilities (estimated), $21,000.

National quarantine and sanitation.

Amount of appropriation		$500,000.00
Repayments, subsistence furnished, etc		110.90
Total		500,110.90
Expenditures:		
For quarantine plant, Mobile Bay	$18,000.00	
For salaries, supplies, improvements, and miscellaneous—		
Mobile Bay	9,468.45	
New Orleans	9,132.70	
Rigolets	480.00	
Lake Borgne	95.00	
Calcasieu	245.83	
Atchafalaya	250.00	
Charleston	2,748.27	
Beaufort	944.48	
Port Royal	867.55	
Georgetown	684.25	
Miscellaneous	968.89	
		43,885.42
Balance June 30, 1907		456,225.48

Outstanding liabilities (estimated), $19,000.

Salaries, Office of Surgeon-General, Public Health and Marine-Hospital Service, 1907.

Amount of appropriation	$41,380.00
Expenditures	41,236.50
Balance June 30, 1907	143.50

Maintenance leprosy hospital Hawaii, 1907.

Balance July 1, 1906, reappropriated	$47,392.23
Expenditures July 1, 1906, to June 30, 1907	8,443.02
Balance June 30, 1907	38,949.21

Leprosy Hospital, Hawaii, buildings and equipment.

Balance, July 1, 1906	$24,875.90
Balance, June 30, 1907	24,875.90

Appropriations, marine hospitals.

Chicago, Ill., act March 3, 1905:	
Balance, July 1, 1906	1,132.98
Balance, June 30, 1907	1,132.98
Key West, Fla., act June 30, 1906:	
Amount appropriated	4,500.00
Amount transferred to Supervising Architect	4,500.00
New York, N. Y., act June 30, 1906:	
Amount appropriated	7,800.00
Amount transferred to Supervising Architect	7,800.00

Appropriations, quarantine stations.

Reedy Island:	
Balance, July 1, 1906, act March 3, 1905	685.97
Expended, July 1, 1906, to June 30, 1907	560.20
Balance, June 30, 1907	125.77

Reedy Island—Continued.		
Balance, July 1, 1906, act March 3, 1901		$667.95
Expended, July 1, 1906, to June 30, 1907		7.75
Balance, June 30, 1907		660.20
Balance, July 1, 1906, act April 28, 1904		2,225.01
Expended, July 1, 1906, to June 30, 1907		2,150.00
Balance, June 30, 1907		75.01
Gulf:		
Balance, July 1, 1906, act March 3, 1905		566.80
Amount transferred to Supervising Architect		500.00
Balance, June 30, 1907		66.80
Balance, July 1, 1906, act March 3, 1899		824.56
Outstanding liabilities		494.65
Balance, June 30, 1907		329.91
San Francisco:		
Balance, July 1, 1906, act March 3, 1905		2,514.05
Expended, July 1, 1906, to June 30, 1907	$305.00	
Outstanding liabilities	1,813.88	
		2,118.88
Balance, June 30, 1907		395.17
Balance, July 1, 1906, act June 6, 1900		4,782.54
Expended, July 1, 1906, to June 30, 1907		5.48
Balance, June 30, 1907		4,777.06
Amount appropriated, act June 30, 1906		9,000.00
Expended, July 1, 1906, to June 30, 1907	$35.43	
Outstanding liabilities	690.00	
		725.43
Balance, June 30, 1907		8,274.57
Port Townsend:		
Balance, July 1, 1906, act March 3, 1905		8,940.00
Amount, transferred to Supervising Architect		8,000.00
Balance, June 30, 1907		940.00
Balance, July 1, 1906, act March 3, 1901		39,966.11
Expended, July 1, 1906, to June 30, 1907		51.44
Balance, June 30, 1907		39,914.67
Savannah:		
Balance, July 1, 1906, act June 6, 1900		112.20
Balance, June 30, 1907		112.20
Balance, July 1, 1906, act April 28, 1904		500.00
Amount transferred to Supervising Architect		175.00
Balance, June 30, 1907		325.00

Key West, Mullet Key:		
Balance, July 1, 1906, act June 6, 1900		$21,817.53
Expended, July 1, 1906, to June 30, 1907	$601.01	
Outstanding liabilities	280.00	
		881.01
Balance, June 30, 1907		20,936.52
South Atlantic:		
Balance, July 1, 1905, act June 28, 1902		2,795.60
Balance, June 30, 1907		2,795.60
Mayport, Fla.:		
Balance, July 1, 1906, act June 28, 1902		1,500.00
Balance, June 30, 1907		1,500.00
Miami, Fla.:		
Balance, July 1, 1906, act June 28, 1902		228.59
Balance, June 30, 1907		228.59
Biscayne Bay:		
Amount appropriated act June 30, 1906		3,500.00
Expended, July 1, 1906, to June 30, 1907		3,479.68
Balance, June 30, 1907		20.32
Boca Grande:		
Balance, July 1, 1906, act June 28, 1902		500.00
Balance, June 30, 1907		500.00
Amount appropriated act June 30, 1906		3,000.00
Balance, June 30, 1907		3,000.00
Pensacola:		
Balance, July 1, 1906, act June 28, 1902		140.47
Amount transferred to Supervising Architect		140.47
Balance, July 11, 1906, act March 3, 1903		415.24
Amount transferred to Supervising Architect		415.24
San Diego:		
Balance, July 1, 1906, act March 3, 1903		6,000.00
Balance, June 30, 1907		6,000.00
Balance, July 1, 1906, act June 28, 1902		18.55
Balance, June 30, 1907		18.55
Cape Charles:		
Balance, July 1, 1906, act March 3, 1899		475.00
Balance, June 30, 1907		475.00
Portland:		
Balance, July 1, 1906, act March 3, 1903		311.10
Amount transferred to Supervising Architect		311.10
Amount appropriated, act June 30, 1906		2,000.00
Expended, July 1, 1906, to June 30, 1907		2,000.00

Marine Hospitals and Relief.

RELIEF OF SEAMEN.

During the year 55,129 seamen were treated at the various stations of the Service, an increase of 766 over the preceding year. Of these, 14,968 were treated in hospital and 40,161 were treated as out-patients. The number of days hospital relief furnished seamen was 408,011.

RELIEF STATIONS.

The Service operated 21 hospitals, all of which are owned by the Government, and maintained 123 other stations where hospital and dispensary relief were furnished.

The new marine hospital at Savannah, Ga., was opened for the reception of patients November 1, 1906. During the year a relief station of the second class in charge of a commissioned medical officer was established at St. Michael, Alaska, and new stations of the third class in charge of acting assistant surgeons were established at Provincetown, Mass., Valdez, Alaska, and Irvington, Va. On account of the small amount of relief furnished, the stations at Bismarck, N. Dak., and Shreveport, La., were discontinued and instructions issued that at Tappahannock, Va., only out-patient treatment be hereafter furnished.

AID TO OTHER BRANCHES OF THE GOVERNMENT.

Revenue-Cutter Service.—One thousand three hundred and fifty-four men were physically examined, of whom 201 were rejected.

Steamboat-Inspection Service.—One thousand one hundred and sixty-one pilots were examined as to visual capacity, of whom 47 were rejected.

Life-Saving Service.—One thousand six hundred and nine keepers and surfmen were physically examined and 69 rejected.

Five hundred and seven papers referred to the Bureau by the General Superintendent of the Life-Saving Service were acted upon. These papers called for an expression of opinion upon the medical evidence of disability submitted in claims for benefits under the act of May 4, 1882, and of the physical fitness of candidates for enlistment and of surfmen and keepers for reenlistment.

Coast and Geodetic Survey.—One hundred and forty-four employees and applicants for appointment were examined and 25 rejected.

Light-House Service.—Twelve applicants for enlistment were examined and 2 rejected.

Civil Service Commission.—Three hundred and thirty-four applicants for appointment were physically examined and 79 rejected.

Isthmian Canal Commission.—One hundred and two employees and applicants for appointment were physically examined and 17 rejected.

PHYSICAL EXAMINATIONS OF MERCHANT SEAMEN.

Physical examinations were made of 247 American merchant seamen, of whom 13 were rejected, and of 10 foreign seamen, of whom 5 were rejected.

PHYSICAL EXAMINATIONS FOR PHILIPPINE ISLANDS.

In the Philippine Islands 444 physical examinations were made of seamen, engineers, and pilots, of whom 45 were rejected.

The total number of physical examinations made during the year was 5,205, and the total number rejected was 488.

EXAMINATION OF DRUGS.

In order to determine the purity and potency of drugs purchased for issue by the purveying depot, samples of such drugs were sub-

mitted to the Hygienic Laboratory for examination, and reports made thereon.

NEW APPARATUS.

The larger marine hospitals of the Service are being fitted up as rapidly as possible with modern X-ray apparatus.

PURVEYING DEPOT.

The following statistics show the transactions of the Purveying Depot during the fiscal year:

Supplies purchased.

DR.

Medical supplies	$10,174.87
Surgical dressings, instruments, etc., and hospital furniture	8,319.01
Dry goods	6,880.33
Pharmaceutical appliances, etc.	2,484.64
Beds and bedding	2,270.90
Books and journals	1,771.33
Wines, liquors, etc	1,245.05
Microscopical and bacteriological apparatus, etc	1,089.09
Flags	743.28
Rubber goods	693.50
Packing boxes and sawdust	427.10
Toilet and wrapping paper	391.00
Total	36,370.05

CR.

By amounts included in the above statement authorized by special Department approval, payments being made from the several appropriations other than that of purveying depot fund:		
Quarantine Service	$1,814.30	
National quarantine and sanitation	1,032.45	
Maintenance fund (journals)	814.81	
Leprosy investigation station	429.30	
Bureau	127.22	
Hygienic Laboratory	110.00	
Epidemic fund	77.35	
		4,405.43
		31,964.62
By amounts reimbursed by other services for supplies issued from stock:		
Quarantine Service	$2,425.43	
National quarantine and sanitation	2,153.81	
Storekeeper, Treasury Department	120.30	
Leprosy investigation station	39.00	
Epidemic fund	31.50	
Supervising Architect	5.95	
		4,775.99
Net expenditures chargeable to purveying depot		27,188.63
Salaries	5,575.00	
Rent	3,250.00	
Operating expenses	433.43	
		9,258.43
Total net expenses		36,447.06
Number of requisitions filled		366
Number of packages shipped		2,510
Total weight of supplies shipped—pounds		265,521

SANATORIUM FOR CONSUMPTIVE SEAMEN, FORT STANTON, N. MEX.

Surgeon P. M. Carrington, in charge of the sanatorium, states that the number of cured cases discharged during the year has been gratifyingly large, a number of long-standing cases being included in the list. In addition to the list of cured patients one medical officer admitted to treatment in December, 1906, made an exceedingly expeditious recovery, and was reported " apparently cured " at the end of six months. Another medical officer who has been under treatment nearly two years is now " apparently cured " and will be so reported in a few weeks unless he should in the meantime relapse.

The list of arrested cases contains the usual percentage who failed by a short time to complete the three months' residence without signs or bacilli. A number of improved and arrested cases are known to be living in El Paso and other towns in this region in an apparent good state of health. Taken all in all, the work of the sanatorium during the fiscal year covered by this report has been very satisfactory, and the record is probably the best made during its existence.

The greatest number of patients under treatment at one time during the year was 190.

Attention is invited to the fact that 12 of the fatal cases had been under treatment less than thirty days, and such cases are usually eliminated from the reports of sanatoria in calculating percentages.

After a careful consideration of the matter, based upon nearly seven years of observation, and after discussion by the medical officers attached to the station, the commanding officer has decided to eliminate spirituous liquors from the materia medica employed at the sanatorium. He states that their usefulness, if they have any, is limited almost entirely to that of flavoring for raw eggs; and light wines, lemon juice, or flavoring extracts containing very little or no alcohol will answer this purpose equally as well.

All patients, no matter what their condition, are upon arrival placed in bed in the central wing of building No. 10, and kept at absolute rest for a period of at least four days. This procedure, instituted in February, 1906, has proved very useful. It enables the attending medical officer to carefully observe the cases and form a general idea of their classification; the patients more readily adjust themselves to the change of environment, and are thoroughly rested before being brought to the examination room. Instead of at once taking the patient out of bed, transferring him to a tent, and requiring him to walk to the general dining room to meals, the present officer attending the hospital, Asst. Surg. F. G. Smith, has instituted the plan of gradually accustoming the patients to even this much exercise, by allowing them first to be up for an hour or two daily, then walking to the dining room for one meal only, and thus transferring them from bed to ambulant cases gradually.

Patients who are found to be continuously febrile are continued in bed so long as may be necessary.

This method of handling arriving patients has been of unquestionable value, and to its adoption may be attributed in part the rather better results obtained during the past year.

The breathing gymnastics administered to ambulant patients have been more carefully regulated during the past year, the officer in charge of the ambulant sick call periodically going over his patients,

particularly taking note of the pulse rate, only those patients whose pulse rate is below 100 being permitted to take the exercise. The efforts on the part of this officer to carefully observe and regulate the daily life and habits of the patients under his professional charge have been continued with beneficial results. The medical officer in command is more strongly impressed than ever with the importance of carefully regulating the amount of exercise which patients are permitted to indulge in, and he believes that rest is not the least important therapeutic measure employed in the treatment of tuberculosis.

The following statistics show the transactions at Fort Stanton for the fiscal year:

Patients under treatment July 1, 1906	181
Patients admitted during the year	184
Total	365
Patients under treatment July 1, 1907	186
Patients discharged during the year	179
Total	365
Ages of patients treated during the year:	
Under 25 years	65
Between 25 and 34 years	112
Between 35 and 44 years	104
Between 45 and 54 years	65
Over 54 years	14
Non-tubercular	5
Total	365
Heredity in patients treated during the year:	
History of tuberculosis in parents	62
No history of tuberculosis in parents	277
History of tuberculosis in parents doubtful	21
Nontubercular	5
Total	365
Stage of disease of patients admitted:	
Incipient	18
Moderately advanced	46
Far advanced	116
Nontubercular	4
Total	184
Area of involvement as shown by physical examination of patients admitted during the year:	
Right lung only	16
Left lung only	2
Both lungs	162
Nontubercular	4
Total	184
General condition on arrival:	
Good	39
Fair	70
Poor	64
Bad (grave)	7
Nontubercular	4
Total	184

Tubercle bacilli:

Were not found in the sputum of	7
Were found in the sputum of	173
Nontubercular	4
Total	184

Record of pulmonary hemorrhages of patients admitted:

Before arrival only	55
After arrival only	11
Both before and after arrival	27
Neither before nor after arrival	85
Doubtful	2
Nontubercular	4
Total	184

Condition of patients at time of discharge:

Cured	2
Apparently cured	20
Arrested	49
Improved	31
Unimproved	8
Died	66
Nontubercular	3
Total	179

Duration of stay and character of cases.

Character of case.	Longest stay.			Shortest stay.			Average stay.		
	Years.	Months.	Days.	Years.	Months.	Days.	Years.	Months.	Days.
Cured	3	7	15	2	5	22	3	0	19
Apparently cured	4	0	10	----	1	[a] 4	1	4	15
Arrested	4	3	12	----	2	2	1	1	15
Improved	3	2	29	----	----	22	----	9	0
Unimproved	1	10	24	----	1	12	----	7	12
Death	1	10	24	----	----	5	----	11	27

[a] This patient, not having completed the period of three months necessary for "apparently cured," was discharged "arrested;" readmitted a few days later, and having remained under observation for the required period was discharged "apparently cured."

The patients have been divided into two classes: List A, which consists of patients who were under treatment at the beginning of the fiscal year, and List B, which consists of patients who were admitted during the year.

LIST A.—*Patients under treatment at beginning of fiscal year.*

	Cured.	Apparently cured.	Arrested.	Improved.	Unimproved.	Died.	Total.
Cases discharged	2	13	37	22	3	32	109
Incipient	----	3	3	0	1	1	8
Moderately advanced	1	4	16	9	2	5	37
Far advanced	1	6	18	13	0	26	64

Patients under treatment July 1, 1906	181
Patients discharged during the year	109
Patients remaining under treatment	72

LIST B.—*Patients admitted during the year.*

	Cured.	Apparently cured.	Arrested.	Improved.	Unimproved.	Died.	Total.
Cases discharged	1	7	12	9	6	35	70
Incipient	----	5	2	2	0	0	9
Moderately advanced	----	1	8	3	1	2	15
Far advanced	----	1	2	4	4	32	43
Nontubercular	1	----	----	----	1	1	3

Patients admitted during the year	184
Patients discharged during the year	70
Patients remaining under treatment	114

Complications.

Syphilis	23
Valvular disease of the heart	20
Disseminated sclerosis	1
Acnae vulgaris	3
Psoriasis	1
Herpes zoster	2
Erysipelas	1
Arterio-sclerosis	8
Degeneration posterior columns of cord	1
Hemiplegia	2
Hemorrhoids	12
Aneurism	2
Cirrhosis of liver	2
Haemophilia	1
Asthma	3
Pyelitis	1
Degeneration lateral columns of cord	1
Dysmenorrhoea	1
Albuminuria	23
Hydro-thorax	5
Pericarditis	2
Fistula in ano	4
Laryngitis	23
Otitis media	14
Emphysema	3
Orchitis	1
Arthritis	2
Lupus	1

Length of time under treatment at sanatorium of the 179 discharged cases.

Over two years	28
Between one and two years	34
Between six and twelve months	35
Between three and six months	33
Under three months	46
Non-tubercular	3
	179

Of the patients discharged during the year 13 were under treatment for less than thirty days. The results in those cases were as follows:

Improved	1
Died	12
	13

A statement of the condition of the patients who remained under treatment at the close of the year will be of interest:

Cured [a]	3
Apparently cured	6
Arrested	74
Improved	47
Unimproved	54

During the year there were under treatment, in addition to the above, consumptive officers and employees as follows:

Under treatment July 1, 1906	11
Admitted during the year	9
	20
Still under treatment June 30, 1907	13
Left during the year	7
	20

Condition of consumptive employees at time of discharge.

Apparently cured	3
Arrested	1
Improved	1
Unimproved	2
	7

Number of physical examinations made during the year 1,211

LABORATORY.

The following work has been done in the laboratory during the fiscal year:

Examinations of sputum		1,239
Positive	985	
Negative	[b] 254	
		1,239
Examinations of urine		1,249
Examinations of pus and exudates		2
Examinations of tumors		1
Examinations of blood for plasmodia		6
Blood counts		2
Guinea pigs injected with sputum		12
Necropsies, including microscopical examinations of organs		56
Pathological slides prepared		604
Examinations of centrifuged sediment taken from mouth of sewer		9

The repairs to the electric power plant have been finished, making it very complete, and the 15 tent houses authorized are being built. The Rio Bonito still furnishes an ample supply of water during the entire year, the deep well and pumping machinery being kept in readiness as a reserve supply. The dairy furnishes an ample supply of milk of superior quality. The greater part of the meat consumed

[a] The three cases reported as cured are retained in the sanatorium by reason of age, infirmities, or other conditions which render them unfit to gain a livelihood. Twenty-seven of the cases reported as "unimproved" have been in the sanatorium too short a time for a second examination. Two cases are nontubercular.

[b] A large percentage of these examinations were from recovering cases.

at the station during the year was furnished by the station herd. A great many of the work horses now used were bred on the station, the alfalfa used by the stock and cattle being also grown on the station.

TABLES.

Appended hereto are certain statistical tables relating to the sick and disabled seamen of the merchant marine treated by the Service during the last fiscal year, and a summary of physical examinations.

I have the honor to remain, respectfully,

WALTER WYMAN,
Surgeon-General.

Hon. GEORGE B. CORTELYOU,
Secretary of the Treasury.

STATISTICAL TABLES.

TABLE I.—COMPARATIVE TABLE OF NUMBER OF PATIENTS ANNUALLY TREATED—1868 TO 1907.

Fiscal year.	Number of sick and disabled seamen furnished relief.	Fiscal year.	Number of sick and disabled seamen furnished relief.
Prior to reorganization:		After reorganization—Continued.	
1868	11,535	1888	48,203
1869	11,356	1889	49,518
1870	10,560	1890	50,671
After reorganization:		1891	52,992
1871	14,256	1892	53,610
1872	13,156	1893	53,317
1873	13,529	1894	52,803
1874	14,356	1895	52,643
1875	15,009	1896	53,804
1876	16,808	1897	54,477
1877	15,175	1898	52,709
1878	18,223	1899	55,489
1879	20,922	1900	56,355
1880	24,860	1901	58,381
1881	32,613	1902	56,310
1882	36,184	1903	58,573
1883	40,195	1904	58,556
1884	44,761	1905	57,013
1885	41,714	1906	54,363
1886	43,822	1907	55,129
1887	45,314		

TABLE II.—EXHIBIT OF THE OPERATIONS OF THE SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1907.

Port.	Total number of seamen treated.	Patients in hospital July 1, 1906.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1907.	Number of days' relief in hospital.	Number of seamen furnished office relief.	Number of times office relief was furnished.	Number of persons examined physically, including pilots.	Number of foreign seamen treated.	Days hospital relief furnished foreign seamen.	Amount expended.
Grand total	**55,129**	**1,029**	**13,939**	**14,968**	**13,409**	**506**	**1,053**	**408,011**	**40,161**	**65,868**	**5,205**	**794**	**9,831**	**$1,006,762.95**
Albany, N. Y.	4	1	3	4	3	1	0	74						186.85
Apalachicola, Fla.	38	1	19	20	20	0	0	275	18	47				747.00
Ashland, Wis.	133	3	28	31	29	2	0	1,076	102	109				1,275.70
Ashtabula, Ohio	254	4	25	29	24	3	2	531	225	444	2			914.85
Astoria, Oreg.	153	0	40	40	35	3	2	469	113	149	20			1,079.60
Baltimore, Md.	1,319	49	468	517	453	19	45	17,133	802	1,125	243			28,431.18
Bangor, Me.	80	1	23	24	22	0	2	255	56	70	12			836.75
Barnstable, Mass., and subports	121								121	236				259.35
Bath, Me.	31								31	37	5			309.42
Beaufort, N. C.	63	0	3	3	3	0	0	37	60	87	50			471.05
Beaufort, S. C.	49								49	71				106.55
Bismarck, N. Dak.	6	0	6	6	5	1	0	88						123.83
Boothbay Harbor, Me.	74	0	7	7	7	0	0	127	67	87	3			469.65
Boston, Mass.	2,839	54	740	794	729	21	44	17,523	2,045	3,258	248	44	293	34,149.73
Bridgeport, Conn.	22	2	16	18	14	4	0	283	4	5				320.00
Brownsville, Tex.														85.70
Brunswick, Ga.	262	2	58	60	57	3	0	948	202	236		17	261	1,496.12
Buffalo, N. Y.	2,161	31	465	496	472	7	17	8,349	1,665	2,230	34			14,308.44
Burlington, Iowa	20	1	12	13	13	0	0	252	7	7				263.00
Cairo, Ill.	560	8	196	204	185	6	13	3,496	356	523	5			14,344.35
California insane														1,003.87
Cambridge, Md.	32	2	22	24	20	4	0	497	8	11				879.45
Castine, Me.	1								1	2				2.00
Cedar Keys, Fla.	43								43	65				3.63
Charleston, S. C.	592	8	51	59	53	3	3	673	533	767	19			2,248.37
Chattanooga, Tenn.	23	0	10	10	10	0	0	142	13	31				379.00
Chicago, Ill.	2,292	27	518	545	488	18	39	16,523	1,747	1,994	80			31,699.25
Cincinnati, Ohio	229	4	53	57	52	4	1	689	172	256	14			3,180.03
Cleveland, Ohio	2,057	35	476	511	447	24	40	14,591	1,546	2,215	51			19,747.02
Corpus Christi, Tex.	12	0	1	1	1	0	0	6	11	21	13			318.80
Crisfield, Md.	95								95	119	5			308.00
Darien, Ga.	15								15	15	10			199.99
Delaware Breakwater, Del.	185								185	207	57			11.80
Detroit, Mich.	1,786	37	408	445	414	13	18	11,372	1,341	2,541	196			20,234.38
Dubuque, Iowa.	29	1	12	13	13	0	0	227	16	26	6			694.32
Duluth, Minn.	347	1	26	27	25	0	2	547	320	340	16			764.17
Eastport, Me.	11	0	2	2	2	0	0	6	9	12				62.94
Edenton, N. C.	98	0	2	2	2	0	0	16	96	138				170.00

Edgartown, Mass	9								9	19				28.35
Elizabeth City, N. C	45								45	48	106			300.00
Ellsworth, Me	8								8	26	4			276,00
El Paso, Tex														73.60
Erie, Pa	215	7	51	58	46	1	11	1,198	157	205	13			1,590.00
Escanaba, Mich	130	1	22	23	22	0	1	357	107	108				660.35
Eureka, Cal	83	1	17	18	17	0	1	194	65	85	11	5	25	773.22
Evansville, Ind	620	6	126	132	115	7	10	3,878	488	561	5			12,329.01
Fernandina, Fla	107	1	13	14	13	1	0	195	93	114	4			620.94
Fort Stanton, N. Mex	365	181	184	365	112	67	186	66,197						103,868.27
Gallipolis, Ohio	175	3	79	82	78	1	3	1,517	93	215	19			2,193.85
Galveston, Tex	962	9	237	246	238	3	5	3,799	716	1,104	137			8,011.44
Georgetown, S. C	226	0	53	53	46	4	3	571	173	233	1			1,599.00
Gloucester, Mass	312	2	21	23	19	3	1	616	289	437	40			1,536.30
Government Hospital for Insane	42	36	6	42	1	6	35	12,777						8,283.71
Grand Haven, Mich	28	1	13	14	14	0	0	234	14	21	72			595.19
Green Bay, Wis	80	1	12	13	10	1	2	174	67	74	18			532.30
Hartford, Conn	8	2	6	8	8	0	0	156						157.00
Honolulu, Hawaii	678	20	254	274	248	9	17	7,826	404	812	64			15,287.42
Hoquiam, Wash	104	3	58	61	58	2	1	754	43	50	7			1,572.94
Houghton, Mich	18	0	8	8	7	0	1	189	10	10	8			534.90
Hygienic Laboratory														60,399.33
Immigration Service														111,483.24
Jacksonville, Fla	362	2	91	93	89	3	1	1,400	269	273	9	4	41	2,788.26
Juneau, Alaska	129	0	42	42	39	2	1	833	87	100				1,443.72
Ketchikan, Alaska	211	0	20	20	19	0	1	187	191	301	1	3	0	1,536.46
Key West, Fla	377	7	120	127	113	4	10	2,955	250	296	43	10	88	9,952.02
La Crosse, Wis	140	3	13	16	14	1	1	159	124	194	1			750.37
Little Rock, Ark	31	0	2	2	2	0	0	28	29	45				268.00
Los Angeles, Cal	561	5	144	149	134	2	13	3,018	412	1,152				10,108.13
Louisville, Ky	842	12	229	241	222	7	12	4,939	601	1,060	30			14,672.89
Ludington, Mich	9	0	4	4	4	0	0	34	5	6	42			195.60
Machias, Me	37	1	8	9	9	0	0	187	28	46	82			492.20
Manistee, Mich	127	3	14	17	14	1	2	184	110	160	19			571.93
Manitowoc, Wis	146	1	58	59	57	1	1	750	87	115	7			1,159.57
Marquette, Mich	93	0	11	11	11	0	0	255	82	98	14			614.00
Marshfield, Oreg	93	0	26	26	23	1	2	224	67	94	10			787.96
Memphis, Tenn	1,841	13	465	478	445	22	11	6,504	1,363	1,812	13			17,031.98
Menominee, Mich	31	0	9	9	9	0	0	121	22	31				439.85
Milwaukee, Wis	1,426	11	414	425	414	4	7	6,212	1,001	1,610	138			8,435.00
Miscellaneous	4								4	4				1,039.30
Mobile, Ala	763	22	330	352	320	12	20	8,548	411	559	71	73	920	15,387.09
Nashville, Tenn	77	0	6	6	6	0	0	106	71	131	6			460.35
Natchez, Miss	88	0	2	2	2	0	0	14	86	186				403.50
New Bedford, Mass	57	0	6	6	4	2	0	78	51	125	8			440.00
Newbern, N. C	379	1	59	60	58	1	1	542	319	645	14			1,266.69
New Haven, Conn	53	2	30	32	29	1	2	529	21	28	16			1,029.50
New London, Conn	96	0	19	19	15	1	3	233	77	92	53			1,051.55
New Orleans, La	1,912	47	451	498	443	11	44	13,388	1,414	1,996	99	90	1,213	26,691.05
Newport, Ark	29								29	48				335.75
Newport, R. I	57	4	40	44	40	1	3	677	13	15	7			1,327.31
Newport News, Va	221	2	19	21	20	1	0	465	200	214				924.02
New York, N. Y	4,594	86	1,184	1,270	1,149	34	87	33,591	3,324	5,502	779	225	3,109	45,647.45

TABLE II.—EXHIBIT OF THE OPERATIONS OF THE SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1907—Continued.

Port.	Total number of seamen treated.	Patients in hospital July 1, 1906.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1907.	Number of days' relief in hospital.	Number of seamen furnished office relief.	Number of times office relief was furnished.	Number of persons examined physically, including pilots.	Number of foreign seamen treated.	Days hospital relief furnished foreign seamen.	Amount expended.
Nome, Alaska	47	2	14	16	12	1	3	228	31	112				1,395.20
Norfolk, Va	2,011	16	423	439	405	15	19	5,941	1,572	2,040	264			11,158.49
Ogdensburg, N. Y	47	2	8	10	10	0	0	191	37	76	49			496.25
Oswego, N. Y	34	0	5	5	5	0	0	58	29	39				159.50
Paducah, Ky	91	0	17	17	16	1	0	177	74	184	2			584.00
Pensacola, Fla	115	4	27	31	30	1	0	529	84	367	59			1,020.75
Philadelphia, Pa	1,770	9	407	416	404	12	0	5,860	1,354	1,808	237			13,006.71
Philippine Islands											444			
Pittsburg, Pa	851	10	221	231	211	7	13	3,656	620	866	33			9,277.71
Ponce, P. R	47	0	8	8	8	0	0	83	39	80		4	0	103.75
Port Huron, Mich	113	0	6	6	4	1	1	95	107	270	48			438.00
Portland, Me	713	25	266	291	251	7	33	11,652	422	756	56	27	342	20,407.55
Portland, Oreg	732	3	139	142	132	5	5	2,429	590	1,180	24			7,578.56
Portsmouth, N. H	20	0	5	5	4	0	1	156	15	16	32			357.40
Port Tampa, Fla	198	4	85	89	85	0	4	1,670	109	292				2,203.00
Port Townsend, Wash	547	26	388	414	364	18	32	14,633	133	258	18	50	734	18,196.79
Providence, R. I	512	2	84	86	79	4	3	1,449	426	1,018	37			3,181.60
Provincetown, Mass	22								22	37	26			88.69
Purveying depot														40,921.48
Railroad transportation, freight charges, etc														10,003.59
Revenue-cutter vessels, cruises of	1,358								1,358	2,905	107			9,305.18
Richmond, Va	29	0	5	5	5	0	0	87	24	75				388.15
Rockland, Me	196	0	2	2	1	0	1	101	194	478	21			637.58
Sag Harbor, N. Y	6								6	10				15.20
Saginaw, Mich	138	2	22	24	21	1	2	422	114	169	4			724.00
Salem, Mass	22	0	5	5	5	0	0	130	17	17				212.52
San Diego, Cal	125	0	29	29	24	2	3	801	96	164	2	11	220	5,178.13
Sandusky, Ohio	65	0	7	7	7	0	0	69	58	75	13			303.50
San Francisco, Cal	2,952	79	1,204	1,283	1,133	40	110	37,953	1,669	3,936	265	171	1,967	42,742.19
San Juan, P. R	316	8	116	124	116	2	6	3,044	192	261	44			2,879.50
St. Louis, Mo	935	12	218	230	200	5	25	6,215	705	989	15			15,813.04
St. Michael, Alaska														398.26
St. Paul, Minn	24	0	10	10	10	0	0	231	14	15				420.27
Sault Ste. Marie, Mich	302	2	113	115	112	1	2	1,330	187	208	25			1,997.00
Savannah, Ga	1,044	12	309	321	301	5	15	5,873	723	925	21	13	166	15,510.02
Seattle, Wash	1,506	6	251	257	240	4	13	3,668	1,249	2,231	197	24	243	4,916.26
Sheboygan, Wis	24	1	9	10	10	0	0	153	14	16	15			461.24

Shreveport, La	1								1	1				82.49
Sitka, Alaska	38	1	14	15	12	1	2	205	23	23				753.35
Solomons, Md	258	0	6	6	6	0	0	71	252	303				587.89
Special duty														13,247.97
Superior, Wis	641	10	140	150	142	4	4	3,053	491	736				3,495.59
Tacoma, Wash	142	0	26	26	23	0	3	437	116	180				1,063.35
Tappahannock, Va., and subports	174	0	120	120	119	0	1	1,279	54	67				2,136.40
Toledo, Ohio	465	0	109	109	108	0	1	1,419	356	1,080	14			1,731.35
Traveling expenses														7,165.78
Valdez, Alaska	30								30	41				157.53
Vicksburg, Miss	192	1	111	112	107	2	3	1,331	80	120				2,313.20
Vineyard Haven, Mass	409	11	131	142	130	3	9	4,002	267	331	3	14	138	8,866.73
Washington, D. C. (Bureau)														28,411.93
Washington, D. C	135	2	24	26	24	1	1	357	109	163	9			1,591.95
Washington, N. C	203	1	32	33	31	1	1	300	170	212	1			428.73
Wheeling, W. Va	28	0	26	26	26	0	0	192	2	2				487.50
Wilmington, Del														20.00
Wilmington, N. C	361	10	110	120	102	8	10	3,323	241	404	37			9,696.15
Cape Charles Quarantine	23								23	24	7			
Cape Fear Quarantine	58	0	2	2	1	1	0	13	56	88	16			
Gulf Quarantine	12	0	11	11	11	0	0	75	1	1		1	7	
San Francisco Quarantine	2								2	7				
Santa Rosa Quarantine	8	0	8	8	8	0	0	64				8	64	

TABLE III.—SUMMARY OF PHYSICAL EXAMINATIONS MADE BY OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1907, EXCLUSIVE OF ALIEN IMMIGRANTS.

Summary of examinations and causes of rejection.	Total.	Pilots.	Merchant seamen.	Revenue-Cutter Service.	Life-Saving Service.	Coast and Geodetic Survey.	Light-House Service.	Foreign seamen.	Immigration Service.	Civil Service Commission.	Isthmian Canal Commission.	Philippine Islands.
Summary of examinations:												
Total number examined	5,205	1,161	247	1,354	1,276	144	12	10	95	334	102	470
Number passed	4,717	1,114	234	1,153	1,224	119	10	5	93	255	85	425
Number rejected	488	47	13	201	52	25	2	5	2	79	17	45
Causes of rejections.												
Abcess of lymph glands	1					1						
Albuminaria	4			4								
Alcoholism	5			4				1				
Ankylosis	3		1	1						1		
Appendicitis	1				1							
Boils	1				1							
Bronchitis	6			6								
Bursitis, knee	1				1							
Catarrh, chronic	1			1								
Cerebral hemorrhage	3				3							
Color blindness	55	28	1	14	3	1	1			1		6
Conjunctivitis	2			2								
Contusion of finger	1				1							
Contusion of shoulder	1			1								
Defective hearing	5	1		2	1						1	
Defective teeth	6			6								
Defective vision	113	18		37	5	1				16	6	30
Dementia, senile	1						1					
Eczema	1			1								
Endocarditis	1					1						
Enlarged testicle	2			1		1						
Enteric fever	1			1								
General debility	1			1								
Gonorrhœa	18		1	15	1				1			
Heart:												
Abnormal action of	20			7	1	1				9		2
Cardiac weakness	1		1									
Mitral insufficiency	3			1	1					1		
Mitral regurgitation	9			2	5					1		1
Organic disease of	2			1							1	
Valvular disease of	17		1	7	4	1				1	2	1
Hernia	15			8						3	3	1
Hydrocele	3			1	2							
Hypertrophy of prostate gland	1				1							
Hypostasis	1			1								
Inflammation of lymph glands	1							1				
Inflammation of stomach	1			1								
Inflammation of testicle	1		1									
Large inguinal canals	1			1								
Locomotor ataxia	3				3							
Loss of eye	1				1							
Loss of teeth	1			1								
Loss of toes	1			1								
Malaria	1							1				
Myalgia	1		1									
Neuralgia, intercostal	1							1				
Obesity	1				1							
Orchitis	1			1								
Pediculi pubis	4			4								
Piles	7			1	6							
Pneumonia	6			2	4							
Poor physique	13			7	1	4					1	
Rheumatism	5		2		3							
Rupture	1			1								
Scabies	6			6								
Soft chancre	2			1				1				
Sprain of forearm	1		1									
Strain of muscles	1		1									
Stricture of urethra	3		1	1		1						
Syphilis	15		1	10		2				1		1
Tuberculosis	12			6		1				3		2
Tympani of both ears	1									1		
Ulcer of feet	2			2								
Ulcer of naval septum	1			1								

TABLE III.—SUMMARY OF PHYSICAL EXAMINATIONS MADE BY OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1907, EXCLUSIVE OF ALIEN IMMIGRANTS—Continued.

Summary of examinations and causes of rejection.	Total.	Pilots.	Merchant seamen.	Revenue-Cutter Service.	Life-Saving Service.	Coast and Geodetic Survey.	Light-House Service.	Foreign seamen.	Immigration Service.	Civil Service Commission.	Isthmian Canal Commission.	Philippine Islands.
Ulcer of penis	4	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
Under age	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Under development	11	.....	.....	5	.....	.....	.....	.....	.....	6	.....	.....
Under height	15	.....	.....	.....	.....	.....	.....	.....	.....	15	.....	.....
Under weight	18	.....	.....	.....	1	.....	.....	.....	.....	17	.....	.....
Urethral discharge	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Varicocele	17	.....	.....	11	.....	2	.....	.....	.....	.....	3	1
Varicose veins	17	.....	.....	8	.....	6	.....	.....	.....	3	.....	.....
Varix of leg	2	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....
Wound of finger	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
TOTAL CASES	**1,029**	**13,939**	**8,100**	**4,849**	**460**	**506**	**1,053**	**40,161**	**55,129**
General diseases	**471**	**5,688**	**3,150**	**2,114**	**155**	**264**	**476**	**15,149**	**21,308**
Smallpox	1	9	8	1	1	....	.....	1	11
Cowpox	.....	.....	.....	.....	.....	.....	.....	137	137
Chicken pox	.....	3	3	.....	.....	.....	.....	5	8
Measles	2	45	41	2	1	1	2	15	62
Rubella	.....	5	4	1	.....	....	.....	.....	5
Scarlet fever	.....	7	3	.....	4	....	.....	1	8
Plague	.....	1	.....	.....	.....	1	.....	.....	1
Relapsing fever	.....	2	2	.....	.....	....	.....	1	3
Dengue	.....	1	.....	1	.....	....	.....	5	6
Influenza	1	408	329	65	5	6	4	975	1,384
Whooping cough	1	.....	1	.....	.....	.....	.....	5	6
Mumps	1	37	35	1	.....	1	.....	20	58
Diphtheria	.....	11	6	.....	2	2	1	3	14
Cerebro-spinal fever	1	8	.....	.....	.....	9	.....	.....	9
Simple continued fever	1	18	16	1	.....	....	2	12	31
Enteric fever	40	479	376	61	2	48	32	40	559
Cholera	.....	.....	.....	.....	.....	....	.....	2	2
Choleraic diarrhœa	.....	2	2	.....	.....	....	.....	6	8
Epidemic diarrhœa	.....	.....	.....	.....	.....	....	.....	27	27
Dysentery	3	91	68	20	2	2	2	114	208
Yellow fever	.....	.....	.....	.....	.....	....	.....	1	1
Beriberi	1	3	1	3	.....	....	.....	1	5
Malarial fever:									
Intermittent	19	777	691	78	4	4	19	1,403	2,199
Remittent	6	235	182	47	2	2	8	84	325
Phagedæna:									
Sloughing phagedæna	.....	1	1	.....	.....	....	.....	.....	1
Hospital gangrene	1	2	1	1	1	....	.....	.....	3
Erysipelas	3	33	30	3	.....	....	3	2	38
Phlegmonous	.....	1	1	.....	.....	....	.....	.....	1
Pyæmia	.....	.....	.....	.....	.....	....	.....	5	5
Septicæmia	.....	4	1	2	.....	1	.....	5	9
Tetanus	.....	2	.....	1	.....	1	.....	.....	2
Tubercle	220	617	31	368	57	150	231	222	1,059
Leprosy	.....	2	.....	2	.....	....	.....	.....	2
Syphilis:									
Primary	9	93	25	77	.....	....	.....	302	404
Secondary	36	597	18	549	18	5	43	2,637	3,270
Tertiary	.....	9	1	7	.....	1	.....	78	87
Gonorrhea	40	671	332	322	12	....	45	4,462	5,173
Diseases dependent on animal parasites	1	92	71	14	3	....	5	389	482
Diseases dependent on vegetable parasites	.....	2	1	.....	1	....	.....	61	63
Effects of animal poisons: Decayed and poisonous food	.....	5	3	1	.....	....	1	8	13
Effects of vegetable poisons:									
Opium	.....	5	.....	4	1	....	.....	19	24
Tobacco	.....	4	4	.....	.....	....	.....	19	23
Cocoaine	1	1	2	.....	.....	....	.....	1	3
Coffee	.....	.....	.....	.....	.....	....	.....	1	1
Effects of inorganic poisons:									
Lead	.....	5	4	1	.....	....	.....	2	7
Mercury	.....	2	2	.....	.....	....	.....	.....	2
Nitric acid	.....	1	.....	.....	.....	1	.....	.....	1
Effects of the presence of foreign bodies	.....	3	3	.....	.....	....	.....	38	41
Effects of mechanical injuries	2	3	3	2	.....	....	.....	14	19
Effects of heat	.....	18	15	2	.....	....	1	7	25
Effects of cold	.....	2	1	.....	.....	....	1	.....	3
Effects of chemical agents	.....	2	1	.....	.....	1	.....	1	3
Effects of excessive exertions and strain	.....	2	2	.....	.....	....	.....	2	4
Surfeit	.....	.....	.....	.....	.....	....	.....	1	1
Scurvy	.....	2	1	1	.....	....	.....	8	10
Alcoholism	5	242	210	28	3	2	4	250	499
Delirium tremens	.....	19	12	4	.....	3	.....	.....	19
Rheumatic fever	13	154	113	49	.....	1	4	46	213

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
Rheumatism	44	743	430	292	20	1	44	2,592	3,379
Gout	.....	1	.....	1	.....	.....	.....	23	24
Osteoarthritis	2	3	.....	5	.....	.....	.....	.....	5
Cyst:									
Mucous	.....	5	4	.....	.....	.....	1	18	23
Sebaceous	.....	11	9	1	.....	.....	1	35	46
Bursal	.....	1	.....	1	.....	.....	.....	.....	.....
New growth, nonmalignant	3	41	19	17	4	.....	4	.....	44
New growth, malignant	8	46	5	16	7	16	10	26	80
Anæmia	1	7	1	3	.....	2	2	57	65
Idiopathic anæmia	1	3	.....	3	.....	.....	1	3	7
Purpura	.....	.....	.....	.....	.....	.....	.....	1	1
Diabetes mellitus	.....	18	.....	14	.....	2	2	19	37
Diabetes insipidus	.....	2	.....	1	1	.....	.....	15	17
Congenital malformations	1	3	2	2	.....	.....	.....	3	7
Debility	3	63	23	37	3	1	2	514	580
Old age	.....	3	.....	1	1	.....	1	10	13
Local diseases	**443**	**5,754**	**3,311**	**2,000**	**258**	**206**	**422**	**19,709**	**25,906**
DISEASES OF THE NERVOUS SYSTEM	120	334	115	155	42	34	108	931	1,385
Of the nerves—									
Inflammation—									
Neuritis	3	47	29	20	.....	.....	1	66	116
Multiple neuritis	2	8	2	3	1	.....	4	8	18
Of the spinal cord and membranes—									
Membranes—									
Inflammation of dura mater	.....	1	.....	.....	.....	1	.....	.....	1
Of the spinal cord and membranes—									
Cord—									
Inflammation, diffuse	1	3	1	.....	.....	.....	3	.....	4
Degeneration—									
Of anterior cornua	2	.....	.....	.....	.....	.....	2	.....	2
Of lateral columns	5	1	.....	2	4	.....	.....	.....	6
Of posterior columns	18	35	2	24	2	4	21	20	73
Of lateral and posterior columns	5	2	.....	1	.....	5	1	.....	7
Of the brain and its membranes—									
Membranes—									
Inflammation—									
Of dura mater	.....	2	.....	1	.....	1	.....	.....	2
Of pia mater and arachnoid	.....	1	.....	.....	.....	1	.....	.....	1
Hemorrhage	.....	3	.....	2	.....	.....	1	.....	3
Of the brain and its membranes—									
Brain—									
Inflammation	.....	1	.....	1	.....	.....	.....	.....	1
Abscess	.....	2	.....	.....	.....	2	.....	1	3
Sclerosis	1	.....	.....	.....	1	.....	.....	.....	.....
Softening	.....	1	.....	.....	1	.....	.....	.....	1
Hemorrhage	6	4	.....	5	.....	.....	5	2	12
Hyperæmia	.....	6	1	4	.....	1	.....	2	8
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy	2	8	1	4	1	3	1	1	11
Paralysis—									
Paraplegia	5	8	1	5	2	1	4	6	19
Hemiplegia	19	24	1	18	5	4	15	21	64
Monoplegia	.....	3	.....	.....	2	.....	1	1	4
Local paralysis	.....	4	1	2	1	.....	.....	12	16
Incomplete paralysis	1	1	1	.....	.....	.....	1	3	5
Paralysis from acute disease	1	.....	.....	1	.....	.....	.....	.....	1
Bed sore	.....	.....	.....	.....	.....	.....	.....	2	2
Paralysis agitans	.....	1	.....	.....	1	.....	.....	.....	1
Chorea	.....	.....	.....	.....	.....	.....	.....	2	2
Spasm	.....	9	9	.....	.....	.....	.....	27	36
Torticollis	.....	3	.....	2	.....	.....	1	10	13
Epilepsy	1	18	4	9	5	.....	1	21	40
Tetany	.....	1	1	.....	.....	.....	.....	2	3
Vertigo	.....	3	.....	2	.....	.....	1	18	21
Headache	.....	10	8	2	.....	.....	.....	138	148

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
DISEASES OF THE NERVOUS SYSTEM—Continued.									
Functional nervous disorders with other diseases of undetermined nature—Continued.									
Hyperæsthesia	.....	.....	.....	.....	.....	.....	.....	2	2
Anæsthesia	.....	1	.....	1	.....	.....	.....	6	7
Neuralgia	3	67	40	25	2	.....	3	385	455
Hysteria	.....	2	1	1	.....	.....	.....	2	4
Stammering	.....	.....	.....	.....	.....	.....	.....	1	1
Hiccoughs	.....	3	1	2	.....	.....	.....	1	1
Nervous weakness	1	25	8	12	4	1	1	156	182
Mental diseases—									
Mania	10	5	2	.....	2	.....	2 9	1	16
Melancholia	1	8	1	1	4	.....	.. 3	2	11
Dementia	23	4	.....	2	.....	.....	1 24	11	38
Mental stupor	.....	1	.....	.....	1	.....	.....	.....	1
General paralysis of the insane	8	2	.....	1	.....	.....	6 3	1	11
Delusional insanity	2	6	.....	2	3	.....	1 2	.....	8
DISEASES OF THE EYE	12	194	71	103	17	.....	0 15	513	719
Conjunctivitis—									
Acute	3	122	35	77	7	.....	.. 6	354	479
Chronic	.....	1	1	.....	.....	.....	.....	10	11
Purulent	1	3	1	1	2	.....	.....	.....	4
Ecchymosis of conjunctiva	.....	.....	.....	.....	.....	.....	.....	2	2
Œdema of conjunctiva	1	1	1	.....	1	.....	.....	.....	2
Degeneration of conjunctiva	.....	.....	.....	.....	.....	.....	.....	1	1
Keratitis	.....	7	5	1	1	.....	.....	14	21
Ulceration of cornea	.....	15	8	5	.....	.....	.. 2	16	31
Opacity of cornea	.....	1	.....	1	.....	.....	.....	2	3
Acquired deformities of cornea	.....	1	.....	.....	.....	.....	.. 1	.....	1
Scleritis	.....	1	1	.....	.....	.....	.....	.....	1
Iritis	1	17	11	6	.....	.....	.. 1	28	46
Synechia	.....	1	.....	.....	1	.....	.....	.....	1
Choroiditis	.....	1	.....	1	.....	.....	.....	.....	1
Glaucoma	.....	1	.....	.....	.....	.....	.. 1	2	3
Optic neuritis	.....	1	.....	1	.....	.....	.....	1	2
Atrophy and degeneration of optic nerve or papilla	.....	3	.....	3	.....	.....	.....	1	4
Retinitis	.....	1	.....	.....	.....	.....	.. 1	.....	1
Lenticular cataract	5	9	3	5	3	.....	.. 3	9	23
Panophthalmitis	1	1	.....	1	1	.....	.....	2	4
Amblyopia—									
Day blindness	.....	.....	.....	.....	.....	.....	.....	2	2
Temporary blindness	.....	1	.....	.....	1	.....	.....	3	4
Muscae volitantes	.....	.....	.....	.....	.....	.....	.....	2	2
Ametropia	.....	.....	.....	.....	.....	.....	.....	11	11
Disorder of accommodation	.....	.....	.....	.....	.....	.....	.....	2	2
Asthenopia	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of lachrymal gland	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of lachrymal sac	.....	1	1	.....	.....	.....	.....	3	4
Obstruction of nasal duct	.....	1	1	.....	.....	.....	.....	4	5
Blepharitis marginalis	.....	1	.....	1	.....	.....	.....	9	10
Sty	.....	.....	.....	.....	.....	.....	.....	23	23
Abscess of eyelid	.....	3	3	.....	.....	.....	.....	3	6
Ecchymosis of eyelid	.....	.....	.....	.....	.....	.....	.....	2	2
Entropion	.....	.....	.....	.....	.....	.....	.....	1	1
Oedema	.....	.....	.....	.....	.....	.....	.....	2	2
Exophthalmos	.....	.....	.....	.....	.....	.....	.....	2	2
DISEASES OF THE EAR	2	53	30	21	1	1	2	269	324
Inflammation of the external meatus—									
Acute	.....	3	.....	3	.....	.....	.....	34	37
Abscess	.....	2	1	1	.....	.....	.....	4	6
Accumulation in external meatus of wax or epidermis	.....	4	3	1	.....	.....	.....	95	99
Inflammation of the middle ear—									
Nonsuppurative	.....	34	21	11	1	1	.....	104	138
Suppurative	2	8	5	3	.....	.....	2	13	23
Within the mastoid cells	.....	2	.....	2	.....	.....	.....	1	3

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
DISEASES OF THE EAR—Continued.									
Perforation of membrana tympani	.....	.....	.....	.....	.....	....	.....	4	4
Obstruction of Eustachian tube	.....	.....	.....	.....	.....	....	.....	2	2
Tinnitus	.....	.....	.....	.....	.....	....	.....	2	2
Deafness	.....	.....	.....	.....	.....	....	.....	10	10
DISEASES OF THE NOSE	1	14	9	5	.....	....	1	381	396
Inflammation of soft parts	.....	9	4	5	.....	....	.....	341	350
Inflammation of framework, necrosis	.....	.....	.....	.....	.....	....	.....	1	1
Diseases of septum—									
Abscess	.....	.....	.....	.....	.....	....	.....	1	1
Perforation	.....	.....	.....	.....	.....	....	.....	1	1
Deviations	.....	2	1	.....	.....	....	1	2	4
Epistaxis	1	3	4	.....	.....	....	.....	9	13
Inflammation of the accessory sinuses	.....	.....	.....	.....	.....	....	.....	4	4
Inflammation of the naso-pharynx	.....	.....	.....	.....	.....	....	.....	22	22
DISEASES OF THE CIRCULATORY SYSTEM	38	333	65	191	16	53	46	437	808
Pericarditis	.....	6	1	4	.....	....	1	4	10
Endocarditis	1	12	2	4	.....	6	1	6	19
Valvular disease—									
Aortic	6	29	.....	25	2	2	6	29	64
Mitral	19	122	1	80	3	37	20	129	270
Aortic and mitral	2	20	.....	15	1	3	3	25	47
Inflammation of muscular substance	.....	3	.....	2	.....	1	.....	3	6
Degeneration of heart, fatty	1	2	1	1	.....	1	.....	4	7
Hypertrophy of heart	.....	1	.....	1	.....	....	.....	1	2
Dilatation of heart	2	7	2	6	1	....	.....	21	30
Syncope	.....	1	1	.....	.....	....	.....	.....	1
Angina pectoris	1	6	3	3	.....	....	1	8	15
Disordered action of the heart—									
Abnormal slowness	.....	1	1	.....	.....	....	.....	7	8
Abnormal rapidity	.....	2	1	1	.....	....	.....	22	24
Irregularity	2	18	5	11	2	....	2	50	70
Arteritis	1	4	.....	2	.....	1	2	1	6
Degeneration of arteries, arterio-capillary fibrosis	2	13	.....	9	2	1	3	4	19
Aneurysm of arteries	.....	9	.....	5	1	1	2	13	22
Obstruction of arteries—									
Thrombosis	.....	.....	.....	.....	.....	....	.....	2	2
Embolism	.....	2	1	1	.....	....	.....	2	4
Phlebitis	.....	4	4	.....	.....	....	.....	8	12
Varix	1	71	42	21	4	....	5	98	170
DISEASES OF THE RESPIRATORY SYSTEM	34	814	469	272	21	56	30	2,998	3,846
Hay fever	.....	2	1	1	.....	....	.....	9	11
Inflammation of mucous membrane of larynx—									
Catarrhal, acute	.....	34	21	12	1	....	.....	70	104
Catarrhal, chronic	1	5	.....	6	.....	....	.....	37	43
Membranous	.....	2	.....	.....	.....	1	1	8	10
Tracheitis	.....	.....	.....	.....	.....	....	.....	29	29
Bronchitis—									
Catarrhal, acute	3	263	167	83	7	1	8	2,349	2,615
Catarrhal, chronic	6	65	13	49	4	3	2	216	28
Spasmodic asthma	2	40	7	29	2	2	2	46	88
Congestion of lung	.....	7	4	2	.....	1	.....	25	32
Hemorrhage of lung	.....	4	4	.....	.....	....	.....	1	5
Hæmoptysis	.....	1	.....	1	.....	....	.....	3	4
Pneumonia	9	222	149	27	3	44	8	16	247
Broncho-pneumonia	.....	10	4	4	.....	1	1	.....	11
Abscess of lung	.....	.....	.....	.....	.....	....	.....	1	1
Gangrene of lung	.....	1	.....	.....	.....	1	.....	.....	1
Chronic interstitial inflammation	.....	4	.....	4	.....	....	.....	1	5
Phthisis—									
Acute	3	9	2	9	.....	1	.....	24	36
Chronic	1	1	.....	1	1	....	.....	7	9
Tubercular	.....	4	.....	1	2	1	.....	1	5

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Emphysema, vesicular	2	5	.....	6	.....	....	1	.....	7
Atelectasis	.....	1	.....	1	.....	....	.....	.....	1
Pleurisy—									
Acute	4	126	93	30	1	....	6	147	277
Chronic	1	4	1	3	.....	1	.....	1	6
Empyema	2	2	1	2	.....	....	1	7	11
Hydrothorax	.....	3	2	1	.....	....	.....	.....	3
DISEASES OF THE DIGESTIVE SYSTEM	69	1,492	1,089	313	66	27	66	6,255	7,816
Inflammation of the lips	.....	.....	.....	.....	.....	....	.....	9	9
Ulceration of the lips	.....	1	1	.....	.....	....	.....	4	5
Fissure of the lips	.....	.....	.....	.....	.....	....	.....	2	2
Inflammation of the mouth	.....	2	1	1	.....	....	.....	49	51
Ulceration of the mouth	1	.....	.....	.....	.....	1	.....	15	16
Inflammation of the dental pulp	.....	.....	.....	.....	.....	....	.....	2	2
Suppuration of the dental pulp	.....	1	.....	.....	1	....	.....	3	4
Caries of dentine and cementum	.....	1	.....	1	.....	....	.....	88	89
Necrosis of cementum	.....	1	.....	1	.....	....	.....	6	7
Inflammation of dental periosteum	.....	2	1	1	.....	....	.....	10	12
Abscess of dental periosteum	.....	8	4	4	.....	....	.....	18	26
Inflammation of gums and alveoli	.....	3	2	1	.....	....	.....	25	28
Suppuration of alveoli	.....	2	2	.....	.....	....	.....	7	9
Ulceration of gums and alveoli	.....	3	2	1	.....	....	.....	7	10
Caries of the alveoli	.....	1	1	.....	.....	....	.....	26	27
Toothache	.....	2	2	.....	.....	....	.....	64	66
Inflammation of the tongue	.....	1	.....	1	.....	....	.....	6	7
Ulceration of the tongue	.....	3	.....	2	1	....	.....	.....	3
Sore throat	.....	27	23	3	1	....	.....	217	244
Inflammation of tonsils—									
Follicular	.....	183	147	31	2	....	3	511	694
Suppuration	.....	27	19	8	.....	....	.....	15	42
Hypertrophy of tonsils	.....	4	2	2	.....	....	.....	3	7
Elongated uvula	.....	.....	.....	.....	.....	....	.....	10	10
Inflammation of salivary glands	.....	2	1	1	.....	....	.....	4	6
Salivation	.....	.....	.....	.....	.....	....	.....	9	9
Inflammation of the pharynx—									
Catarrhal	1	21	13	7	.....	....	2	274	296
Granular	.....	2	.....	2	.....	....	.....	6	8
Follicular	.....	10	8	2	.....	....	.....	14	24
Post-pharyngeal abscess	.....	1	1	.....	.....	....	.....	4	5
Ulceration of pharynx	.....	1	1	.....	.....	....	.....	7	8
Inflammation of the stomach—									
Catarrhal	5	156	112	38	5	....	6	438	599
Phlegmonous or suppurative	2	.....	.....	.....	.....	2	.....	1	3
Ulceration of the stomach—									
Superficial	.....	9	1	4	2	....	2	4	13
Perforating	.....	1	1	.....	.....	....	.....	.....	1
Hemorrhage of the stomach	.....	2	1	1	.....	....	.....	2	4
Dilatation of the stomach	1	3	1	1	1	....	1	2	6
Stricture of pyloris	.....	1	.....	.....	.....	....	1	.....	1
Indigestion	6	128	101	28	2	....	3	1,410	1,544
Pyrosis	.....	1	1	.....	.....	....	.....	23	24
Nausea	.....	.....	.....	.....	.....	....	.....	15	15
Vomiting	.....	.....	.....	.....	.....	....	.....	4	4
Gastralgia	.....	11	10	.....	.....	....	1	19	30
Heartburn	.....	.....	.....	.....	.....	....	.....	1	1
Loss of appetite	.....	.....	.....	.....	.....	....	.....	33	33
Inflammation of the intestines—									
Enteritis	3	69	57	7	3	3	2	111	183
Typhlitis	11	83	64	14	7	1	8	46	140
Colitis	2	20	14	6	.....	1	1	39	61
Catarrhal	3	43	35	10	.....	1	.....	64	110
Ulceration of the intestines	1	1	1	1	.....	....	.....	1	3
Constipation	.....	.....	.....	.....	.....	....	.....	5	5
Fæcal accumulation	.....	8	8	.....	.....	....	.....	4	12
Hernia	12	187	165	10	12	2	10	588	789
Obstruction of the intestines	1	5	1	2	.....	3	.....	.....	6
Intestinal dyspepsia	.....	3	1	2	.....	....	.....	13	16
Constipation	.....	37	24	8	3	....	2	932	969

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Colic	.....	13	8	3	.....	1	1	30	43
Diarrhœa	3	116	83	26	3	....	7	508	627
Enteralgia	.....	5	4	.....	1	....	.....	6	11
Inflammation of the rectum	.....	4	.....	3	1	....	.....	.....	4
Periproctitis	1	12	9	3	.....	....	1	6	19
Abscess	1	17	12	4	.....	....	2	14	32
Ulceration of rectum	.....	2	1	1	.....	....	.....	1	3
Fissure of the anus	.....	2	1	1	.....	....	.....	7	9
Fistula in ano	4	51	34	13	4	....	4	35	90
Prolapse of the rectum	1	1	1	1	.....	....	.....	1	3
Piles—									
Internal	2	15	11	5	1	....	.....	59	76
External	.....	35	29	5	1	....	.....	181	216
Mixed	1	17	14	2	1	....	1	24	42
Pruritus ani	.....	1	1	.....	.....	....	.....	24	25
Inflammation of the liver—									
Acute	.....	8	2	3	1	2	.....	18	26
Acute suppuration	.....	2	.....	1	1	....	.....	1	3
Acute abscess	.....	6	.....	2	2	....	2	1	7
Chronic	2	9	.....	5	3	2	1	2	13
Hyperæmia of the liver	1	11	6	5	1	....	.....	79	91
Degenerations of the liver	.....	.....	.....	.....	.....	....	.....	1	1
Hypertrophy of the liver	.....	2	.....	.....	1	1	.....	1	3
Jaundice	.....	25	17	5	1	1	1	24	49
Inflammation of hepatic ducts and gall bladder	3	29	19	9	2	1	1	31	63
Calculi	.....	14	2	5	2	2	3	9	23
Accumulation of bile	.....	3	2	1	.....	....	.....	16	19
Biliary colic	.....	2	1	1	.....	....	.....	2	4
Perforation of gall bladder	.....	1	.....	1	.....	....	.....	.....	1
Inflammation of the peritonæum	1	9	2	6	.....	2	.....	2	12
Dropsy	.....	2	1	1	.....	....	.....	1	3
Adhesion of peritoneum	.....	.....	.....	.....	.....	....	.....	1	1
DISEASES OF THE LYMPHATIC SYSTEM.	32	388	229	153	20	2	17	494	914
Splenitis	.....	1	.....	.....	1	....	.....	1	2
Hypertrophy of spleen	.....	2	.....	1	1	....	.....	.....	2
Inflammation of lymph glands	24	327	196	123	18	....	14	437	788
Suppuration	4	49	25	23	.....	2	3	44	97
Hypertrophy of lymph glands	.....	2	1	1	.....	....	.....	8	10
Inflammation of lymphatics	4	1	2	3	.....	....	.....	.....	5
Suppuration	.....	5	5	.....	.....	....	.....	2	7
Elephantiasis	.....	1	.....	1	.....	....	.....	2	3
DISEASES OF THE THYROID BODY	.....	2	.....	2	.....	....	.....	4	6
Inflammation	.....	.....	.....	.....	.....	....	.....	1	1
Goitre	.....	2	.....	2	.....	....	.....	2	4
Phosphaturia	.....	.....	.....	.....	.....	....	.....	1	1
DISEASES OF THE SUPRARENAL CAPSULES	.....	.....	.....	.....	.....	....	.....	1	1
Addison's disease	.....	.....	.....	.....	.....	....	.....	1	1
DISEASES OF THE URINARY SYSTEM	14	215	47	127	15	25	15	479	708
Acute nephritis	.....	26	4	17	4	1	.....	27	53
Bright's disease—									
Chronic nephritis	6	93	4	61	7	17	10	63	162
Granular kidney	1	12	.....	7	1	4	.....	11	24
Abscess—									
Of kidney	1	1	1	1	.....	....	.....	2	4
Pyonephrosis	.....	1	.....	1	.....	....	.....	.....	.....
Perinephritic	1	1	.....	.....	.....	1	1	.....	2
Pyelitis	.....	3	.....	2	.....	....	1	6	9
Movable kidney	.....	2	1	1	.....	....	.....	1	3
Calculus in kidney	.....	5	4	.....	.....	1	.....	3	8
Calculus in ureter	.....	1	.....	1	.....	....	.....	4	5
Suppression of urine	.....	1	1	.....	.....	....	.....	2	3
Hæmaturia	.....	1	.....	1	.....	....	.....	12	13

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
DISEASES OF THE URINARY SYSTEM—Continued.									
Lithuria	.....	3	1	2	.....	.....	.....	12	15
Phosphaturia	.....	.....	.....	.....	.....	.....	.....	3	3
Inflammation of bladder—									
Acute	2	37	14	23	.....	1	1	216	255
Subacute	.....	7	2	3	2	.....	.....	19	26
Chronic	3	5	4	4	1	.....	.....	17	25
Calculus of bladder	.....	3	2	1	.....	.....	.....	7	10
Hernia	.....	.....	.....	.....	.....	.....	.....	1	1
Irritability of bladder	.....	3	1	2	.....	.....	.....	43	40
Retention of urine	.....	7	6	.....	.....	....	1	3	10
Incontinence of urine	.....	3	2	.....	.....	....	1	27	30
DISEASES OF THE GENERATIVE SYSTEM.	47	899	516	336	33	3	58	2,519	3,465
Urethritis	.....	8	4	3	1	.....	.....	40	48
Gleet	.....	1	.....	1	.....	.....	.....	11	12
Abscess of the urethra	.....	4	1	3	.....	.....	.....	3	7
Ulcer of the urethra	.....	.....	.....	.....	.....	.....	.....	1	1
Hemorrhage of the urethra	.....	2	2	.....	.....	.....	.....	.....	2
Stricture of the urethra—									
Organic	5	94	34	57	2	....	6	222	321
Spasmodic	.....	4	2	1	.....	....	1	4	8
Urethral fistula	.....	3	2	1	.....	.....	.....	5	8
Recto-urethral fistula	.....	1	.....	.....	1	.....	.....	1	2
Extravasation of urine	.....	1	.....	1	.....	.....	.....	.....	1
Keloid	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of the prostate—									
Acute	.....	3	1	2	.....	.....	.....	12	15
Chronic	.....	4	.....	3	.....	1	.....	2	6
Prostatorrhœa	.....	1	.....	.....	.....	1	.....	6	7
Hypertrophy of the prostate	1	10	2	7	.....	1	1	36	47
Posthitis	.....	1	1	.....	.....	.....	.....	5	6
Phimosis	1	36	25	9	2	....	1	15	52
Paraphimosis	.....	6	6	.....	.....	.....	.....	5	11
Inflammation of the penis, of the glands	.....	2	2	.....	.....	.....	.....	24	26
Abscess of penis	.....	6	4	2	.....	.....	.....	2	8
Ulcer of penis	12	200	125	69	7	....	11	401	613
Œdema of penis	.....	1	.....	1	.....	.....	.....	1	1
Soft chancre	22	270	140	114	6	....	32	1,310	1,602
Priapism	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of the scrotum	.....	.....	.....	.....	.....	.....	.....	2	2
Abscess of the scrotum	.....	4	2	2	.....	.....	.....	6	10
Pruritus of the scrotum	.....	1	1	.....	.....	.....	.....	4	5
Gangrene of penis	.....	1	.....	1	.....	.....	.....	.....	1
Hydrocele of the spermatic cord	.....	8	7	1	.....	.....	.....	23	31
Hæmatocele of the spermatic cord	.....	.....	.....	.....	.....	.....	.....	1	1
Varicocele	.....	43	29	5	6	....	3	111	154
Hydrocele of tunica vaginalis	2	33	22	8	4	....	1	53	88
Inflammation of the testicle—									
Acute orchitis	2	95	72	24	1	.....	.....	127	224
Chronic orchitis	.....	3	2	.....	1	.....	.....	3	6
Epididymitis	1	43	23	18	2	....	1	21	65
Abscess of testicle	.....	1	1	.....	.....	.....	.....	2	3
Spermatorrhœa	1	.....	1	.....	.....	.....	.....	20	21
Impotence	.....	.....	.....	.....	.....	.....	.....	20	20
Hypertrophy of prepuce	.....	1	1	.....	.....	.....	.....	3	4
Inflammation of the ovary	.....	.....	.....	.....	.....	.....	.....	3	3
Pelvic abscess	.....	1	.....	1	.....	.....	.....	.....	1
Abscess of the uterus	.....	1	1	.....	.....	.....	.....	.....	1
Displacements and distortions of the uterus	.....	1	.....	1	.....	.....	.....	.....	1
Inflammation of the vagina	.....	.....	.....	.....	.....	.....	.....	2	2
Amenorrhœa	.....	.....	.....	.....	.....	.....	.....	1	1
Dysmenorrhœa	.....	.....	.....	.....	.....	.....	.....	4	4
Leucorrhœa	.....	.....	.....	.....	.....	.....	.....	4	4
Abortion	.....	2	2	.....	.....	.....	.....	.....	2
Retention of placenta	.....	1	.....	.....	.....	....	1	.....	1
Inflammation of mammary glands	.....	1	.....	1	.....	.....	.....	.....	1
Inflammation of breast	.....	1	1	.....	.....	.....	.....	.....	1

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
DISEASES OF THE ORGANS OF LOCOMOTION	27	261	153	94	19	1	21	1,187	1,475
Inflammation of the bones—									
Osteitis	1	12	4	7	.....	....	2	11	24
Periostitis	2	3	2	3	.....	....	.....	1	6
Caries	2	7	4	4	1	....	.....	4	13
Necrosis	2	25	11	11	1	....	4	18	45
Ununited fracture or false joint	2	.....	2	.....	.....	....	.....	.....	2
Inflammation of joints—									
Acute synovitis	.....	34	16	13	2	1	2	50	84
Chronic synovitis	3	2	.....	5	.....	....	.....	1	6
Suppuration	.....	2	1	1	.....	....	.....	2	4
Ankylosis	4	4	3	3	.....	....	2	10	18
Dislocation of articular cartilage	.....	.....	.....	.....	.....	....	.....	2	2
Loose body in joint	.....	.....	.....	.....	.....	....	.....	2	2
Relaxation of ligaments	.....	1	.....	1	.....	....	.....	1	2
Spondylitis	.....	2	.....	1	1	....	.....	1	3
Caries of the spine	1	2	.....	1	1	....	1	.....	3
Psoas, lumbar, and other abscesses	.....	1	.....	1	.....	....	.....	.....	1
Posterior curvature of spine, angular	1	.....	.....	.....	.....	....	1	.....	1
Lateral curvature of spine	.....	1	.....	.....	1	....	.....	.....	1
Anterior curvature of spine	1	1	2	.....	.....	....	.....	.....	2
Inflammation of muscles	.....	3	1	1	.....	....	1	1	4
Suppuration of muscles	.....	3	3	.....	.....	....	.....	6	9
Idiopathic muscular atrophy	.....	2	.....	.....	1	....	1	1	3
Myalgia—									
Lumbago	4	117	83	25	7	....	6	968	1,089
Stiff neck	.....	.....	.....	.....	.....	....	.....	11	11
Inflammation of fasciæ	.....	.....	.....	.....	.....	....	.....	1	1
Inflammation of tendons	.....	.....	.....	.....	.....	....	.....	1	1
Adhesion of tendons	.....	1	.....	1	.....	....	.....	.....	1
Contraction of tendons	.....	2	.....	2	.....	....	.....	.....	2
Inflammation of sheaths of tendons	.....	2	2	.....	.....	....	.....	9	11
Thecal abscess	.....	3	1	2	.....	....	.....	6	9
Ganglion	.....	2	.....	2	.....	....	.....	3	5
Inflammation of bursæ—									
Acute	3	11	11	1	2	....	.....	31	45
Chronic	.....	2	.....	2	.....	....	.....	.....	2
Abscess of bursæ	.....	4	3	1	.....	....	.....	6	10
Bunion	1	2	2	1	.....	....	.....	13	16
Bursal cyst	.....	1	1	.....	.....	....	.....	11	12
Bursal tumor	.....	.....	.....	.....	.....	....	.....	3	3
Flat foot	.....	9	1	5	2	....	1	13	22
DISEASES OF THE CONNECTIVE TISSUE	17	350	249	96	4	0	18	738	1,105
Inflammation	8	111	69	46	1	....	3	263	382
Abscess	7	229	174	47	• 2	....	13	463	699
Gangrene	1	2	1	1	.....	....	1	2	5
Œdema	1	6	5	1	1	....	.....	6	13
Emphysema	.....	.....	.....	.....	.....	....	.....	1	1
Undue formation of fat	.....	2	.....	1	.....	....	1	3	5
DISEASES OF THE SKIN	30	405	269	133	4	4	25	2,503	2,938
Erythema	1	7	7	1	.....	....	.....	29	37
Pityriasis rosea	.....	.....	.....	.....	.....	....	.....	2	2
Urticaria	1	1	2	.....	.....	....	.....	70	72
Prickly heat	.....	.....	.....	.....	.....	....	.....	30	30
Eczema	3	29	18	12	1	....	1	509	541
Impetigo	1	4	4	1	.....	....	.....	47	52
Pityriasis rubra	.....	.....	.....	.....	.....	....	.....	2	2
Prurigro	.....	.....	.....	.....	.....	....	.....	5	5
Lichen	.....	1	1	.....	.....	....	.....	12	13
Psoriasis	1	8	3	5	.....	....	1	30	39
Herpes	.....	2	2	.....	.....	....	.....	68	70
Zona	.....	5	3	2	.....	....	.....	43	48
Pemphigus	1	1	2	.....	.....	....	.....	2	4
Dermatitis herpetiformis	.....	1	.....	1	.....	....	.....	5	6
Acne	.....	3	2	1	.....	....	.....	81	84

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
DISEASES OF THE SKIN—Continued.									
Gutta rosea	.....	.....	.....	.....	.....	...	.....	3	3
Sycosis	.....	5	4	.....	.....	...	1	29	34
Seborrhœa	.....	.....	.....	.....	.....	...	.....	7	7
Leucodermia	.....	.....	.....	.....	.....	...	.....	2	2
Alopecia	.....	.....	.....	.....	.....	...	.....	2	2
Chilblain	.....	.....	.....	.....	.....	...	.....	4	4
Ulcer	15	200	114	77	1	4	19	646	861
Cicatrices	.....	1	.....	1	.....	...	.....	.....	1
Boil	2	72	55	18	1	...	.....	600	674
Carbuncle	2	32	27	5	1	...	1	59	93
Whitlow	2	17	13	4	.....	...	2	63	82
Onychia	.....	9	8	1	.....	...	.....	42	51
Keratosis pilaris	.....	.....	.....	.....	.....	...	.....	23	1
Tylosis	.....	1	.....	1	.....	...	.....	2	7
Corn	.....	.....	.....	.....	.....	...	.....	6	23
Cheloid	.....	1	.....	1	.....	...	.....	6	3
Wen	.....	.....	.....	.....	.....	...	.....	16	6
Adenoma sebaceum	1	.....	.....	1	.....	...	.....	1	3
Hyperidrosis	.....	.....	.....	.....	.....	...	.....	1	7
Pruritus	.....	4	3	1	.....	...	.....	3	16
Lupus	.....	.....	.....	.....	.....	...	.....	3	2
Ringworm	.....	1	1	.....	.....	...	.....	50	51
Injuries	**115**	**2,497**	**1,639**	**735**	**47**	**36**	**155**	**5,303**	**7,915**
GENERAL INJURIES	6	169	128	31	2	4	10	245	420
Effects of heat—									
Burns and scalds	2	91	66	18	2	1	6	178	271
Heat stroke	.....	27	25	1	.....	1	.....	14	41
Sunstroke	.....	1	1	.....	.....	...	.....	.....	1
Effects of cold	.....	3	3	.....	.....	...	.....	16	19
Effects of chemical irritants and corrosives	.....	2	1	1	.....	...	.....	6	8
Lightning stroke	.....	.....	.....	.....	.....	...	.....	1	1
Multiple injury	3	34	24	9	.....	1	3	26	63
Suffocation	.....	3	2	.....	.....	1	.....	.....	3
Privation—Starvation	.....	2	1	1	.....	...	.....	1	3
Exhaustion	.....	5	3	1	.....	...	1	1	6
Shock	1	1	2	.....	.....	...	.....	2	4
LOCAL INJURIES	109	2,328	1,511	704	45	32	145	5,058	7,495
Contusion of nerves	.....	2	1	1	.....	...	.....	1	3
Compression of nerves	.....	1	1	.....	.....	...	.....	.....	1
Wound of nerves	.....	1	1	.....	.....	...	.....	7	8
Contusion of veins	.....	.....	.....	.....	.....	...	.....	1	1
Rupture of veins	.....	2	1	1	.....	...	.....	1	3
Contusion of muscles	.....	6	5	1	.....	...	.....	17	23
Strain of muscles	.....	14	10	3	.....	...	1	71	85
Rupture of muscles	.....	.....	.....	.....	.....	...	.....	3	3
Wound of muscles	.....	5	5	.....	.....	...	.....	.....	5
Strain of tendons	.....	2	1	1	.....	...	.....	6	8
Rupture of tendons	.....	1	.....	.....	.....	...	1	9	10
Wound of tendons	.....	2	2	.....	.....	...	.....	8	10
Contusion of skin	.....	2	1	.....	.....	...	1	20	22
Abrasion of skin	.....	8	7	1	.....	...	.....	67	75
Wound of skin	1	4	5	.....	.....	...	.....	44	49
Burn or scald of skin	8	74	55	15	4	3	5	204	286
Frostbite	1	28	17	11	1	...	.....	40	69
Effects on the skin of irritants or corrosives	.....	1	.....	1	.....	...	.....	7	8
Wound of mucous membrane	.....	.....	.....	.....	.....	...	.....	1	1
Burn or scald of mucous membrane	.....	7	6	1	.....	...	.....	21	28
Effects on the mucous membrane of irritants or corrosives	.....	.....	.....	.....	.....	...	.....	1	1
Contusion of scalp	.....	9	6	2	1	...	.....	22	31
Wound of scalp—									
With injury to the aponeurosis	2	72	51	18	.....	1	4	152	226
With injury to the pericranium	2	25	16	10	.....	...	1	11	38
With injury to the bone	1	4	1	1	.....	2	1	1	6

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
LOCAL INJURIES—Continued.									
Contusion of skull	.....	3	1	1	.....	....	1	1	4
Fracture of the vault of skull	1	9	6	3	.....	....	1	.....	10
Fracture of the base of skull	.....	10	5	2	.....	3	.....	.....	10
Wound of skull	.....	2	.....	.....	.....	2	.....	2	4
Concussion of brain	1	15	6	7	.....	1	2	5	21
Contusion of face	1	19	17	3	.....	....	.....	46	66
Wound of face and mouth	.....	68	48	19	1	....	.....	127	195
Foreign bodies in the nose, antrum, or other cavities	.....	.....	.....	.....	.....	....	.....	2	2
Fracture of facial bones	1	34	13	15	1	....	6	16	51
Dislocation of nasal cartilages	.....	1	1	.....	.....	....	.....	2	3
Injuries of alveoli and teeth	1	.....	.....	1	.....	....	.....	1	2
Dislocation of lower jaw	.....	.....	.....	.....	.....	....	.....	1	1
Contusion of eyelid	.....	3	2	1	.....	....	.....	15	18
Wound of eyelid	.....	4	2	2	.....	....	.....	20	24
Subconjunctival hemorrhage	.....	1	1	.....	.....	....	.....	2	3
Wound of conjunctiva	.....	2	2	.....	.....	....	.....	2	4
Contusion of eyeball	.....	3	2	.....	.....	....	1	4	7
Foreign bodies in the conjunctiva or cornea	.....	3	3	.....	.....	....	.....	101	104
Wound of eyeball	1	8	5	3	1	....	.....	6	15
Contusion of pinna	.....	2	1	1	.....	....	.....	1	3
Wound of pinna	.....	4	3	1	.....	....	.....	6	10
Foreign body in external meatus	.....	.....	.....	.....	.....	....	.....	2	2
Contusion of neck	.....	2	2	.....	.....	....	.....	3	5
Wound of neck	2	4	2	1	.....	3	.....	7	13
Foreign body in the food passages	.....	.....	.....	.....	.....	....	.....	2	2
Compression of chest	.....	3	2	.....	.....	....	1	1	4
Contusion of chest	3	77	58	19	1	1	1	185	265
Dislocation of costal cartilages	.....	2	1	1	.....	....	.....	1	3
Fracture of ribs	3	92	54	34	2	1	4	61	156
Contusion of back	3	83	53	31	.....	....	2	117	213
Gunshot wound	.....	10	4	3	.....	1	2	4	14
Wound of parietes of chest	.....	3	3	.....	.....	....	.....	3	6
Penetrating wound of pleura or lung	.....	3	2	1	.....	....	.....	1	4
Sprain of back	.....	35	24	11	.....	....	.....	121	156
Wound of back	.....	15	10	4	.....	....	1	12	27
Fracture of spine	.....	1	.....	.....	.....	1	.....	.....	1
Dislocation of spine	.....	1	.....	.....	.....	....	1	1	2
Concussion of cord	1	3	1	1	.....	....	2	1	5
Contusion of abdomen	.....	15	13	2	.....	....	.....	14	29
Wound of parietes of abdomen	.....	11	5	2	1	3	.....	15	26
Contusion of the pelvis	1	1	1	1	.....	....	.....	3	5
Contusion of the perinæum, scrotum, or penis	1	.....	.....	1	.....	....	.....	5	6
Wound of the male urethra, perinæum, scrotum, testis, or penis	.....	6	2	3	.....	1	.....	21	27
Wound of anus	.....	.....	.....	.....	.....	....	.....	1	1
Rupture of urethra	1	3	1	1	.....	2	.....	.....	4
Fracture or dislocation of pelvic bones	1	3	1	.....	.....	2	1	.....	4
Contusion of testicle	.....	7	4	2	1	....	.....	4	11
Diffused hæmatocele of cord	.....	1	.....	1	.....	....	.....	.....	1
Contusion of upper extremities	3	100	74	26	2	....	1	386	489
Sprain of shoulder	.....	7	5	2	.....	....	.....	44	51
Sprain of elbow	1	2	2	1	.....	....	.....	15	18
Sprain of wrist	2	29	19	11	.....	....	1	136	167
Sprain of hand	.....	.....	.....	.....	.....	....	.....	22	22
Sprain of thumb	.....	.....	.....	.....	.....	....	.....	11	11
Sprain of fingers	.....	2	.....	1	.....	....	1	7	9
Wound of upper extremities	6	280	181	91	1	....	13	1,482	1,768
Wound of joint, upper extremities	.....	5	3	2	.....	....	.....	12	17
Fracture of clavicle	3	23	15	7	2	....	2	9	35
Fracture of scapula	.....	7	3	4	.....	....	.....	5	12
Fracture of humerus	3	28	20	7	2	....	2	8	39
Fracture of bones of forearm—									
Radius	1	23	11	9	1	....	3	20	44
Ulna	.....	12	8	3	.....	....	1	11	23
Both bones	1	9	5	5	.....	....	.....	10	20

TABLE IV.—TABULAR STATEMENT OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1907—Continued.

Disease.	Number of cases.								
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	Total treated in hospital and dispensary.
LOCAL INJURIES—Continued.									
Fracture of carpus, metacarpus, or phalanges	5	33	17	17	1	....	3	46	84
Dislocation of clavicle	.....	9	4	5	.....	....	.....	2	11
Dislocation of scapula	.....	1	.....	1	.....	....	.....	.....	1
Dislocation of humerus	1	28	19	8	.....	....	2	11	40
Dislocation of radius and ulna	.....	2	1	1	.....	....	.....	2	4
Dislocation of phalanges of thumb	.....	.....	.....	.....	.....	....	.....	2	2
Dislocation of phalanges of fingers	.....	2	1	1	.....	....	.....	1	3
Contusion of lower extremities	6	285	191	83	1	....	16	397	688
Sprain of hip	.....	4	3	1	.....	....	.....	20	24
Sprain of knee	1	26	14	11	1	....	1	63	90
Sprain of ankle	1	134	87	37	.....	....	11	146	281
Sprain of foot	.....	9	3	3	.....	....	3	17	26
Internal derangement of joints	.....	1	1	.....	.....	....	.....	1	2
Wound of lower extremities	12	195	136	55	3	2	11	446	653
Wound of joint, lower extremities	1	16	6	10	.....	....	1	10	27
Fracture of femur	8	36	18	10	4	3	9	3	47
Fracture of cervix femoris	.....	1	.....	1	.....	....	.....	1	2
Fracture of patella	.....	4	2	1	.....	....	1	.....	4
Fracture of tibia	4	42	30	8	4	....	4	12	58
Fracture of fibula	2	26	15	10	3	....	.....	16	44
Fracture of tibia and fibula	9	60	41	14	1	....	13	6	75
Fracture of bones of foot—									
Of the tarsus	1	3	2	1	.....	....	1	.....	4
Of the metatarsus	.....	9	5	3	.....	....	1	5	14
Of the phalanges of the toes	.....	10	6	3	.....	....	1	6	16
Dislocation of femur	1	5	2	3	1	....	.....	.....	6
Dislocation of patella	.....	1	.....	.....	1	....	.....	1	2
Dislocation of tibia	.....	2	1	.....	.....	....	1	1	3
Dislocation of foot	.....	4	3	.....	.....	....	1	.....	4
Dislocation of metatarsus and phalanges	.....	1	1	.....	.....	....	.....	3	4
Dislocation of astragalus	.....	2	.....	1	.....	....	1	.....	2
Dislocation of os calcis	.....	1	1	.....	.....	....	.....	1	2
Malingerers	.....	7	2	2	3	....	.....	1	8

TABLE V.—COMPARATIVE EXHIBIT—RATIO OF DEATHS FROM SPECIFIC CAUSES, 1898–1907.

Deaths from—	General average.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
General diseases	48.94	45.45	55.60	44.02	45.60	44.01	48.06	49.49	53.46	51.52	52.17
Diseases of the—											
Nervous system	5.78	6.56	3.02	3.62	8.78	7.29	5.36	5.30	6.32	4.87	6.72
Circulatory system	10.87	12.86	9.07	9.71	11.87	12.23	10.72	8.76	11.88	11.16	10.47
Respiratory system	11.81	11.29	9.30	15.12	13.53	13.54	11.64	14.66	8.81	9.13	11.06
Digestive system	6.97	7.35	7.67	9.70	6.65	7.55	7.39	7.33	4.79	5.88	5.34
Genito-Urinary system	6.40	5.25	8.37	9.03	5.70	4.94	6.65	6.72	5.74	6.09	5.54
Injuries	6.80	8.66	5.35	6.32	5.22	7.55	6.47	5.09	7.09	9.13	7.12
From all other causes	2.43	2.63	1.62	2.48	2.61	2.86	3.71	2.65	1.91	2.22	1.58

TABLE VI.—NATIVITIES OF PATIENTS TREATED IN HOSPITAL DURING THE FISCAL YEAR ENDED JUNE 30, 1907.

Country.	Number.	Country.	Number.
Total	14,968	Ireland	735
		Italy	74
Argentine Republic	4	Japan	49
Australia	39	Mexico	16
Austria	147	Netherlands	57
Belgium	30	Newfoundland	103
Canada	490	Norway	1,085
Cape Verde Islands	64	Peru	3
Central America	5	Philippines	11
Chile	28	Porto Rico	31
China	9	Portugal	72
Colombia	3	Russia	141
Cuba	4	Scotland	173
Denmark	233	Spain	171
England	481	Sweden	722
Finland	403	Switzerland	20
France	93	Turkey	14
Germany	873	United States	8,147
Greece	77	Wales	19
Hawaii	57	West Indies	153
India	6	All other countries	126

TABLE VII.—SURGICAL OPERATIONS, FISCAL YEAR 1907.

Operations.	No. of cases.	Operations.	No. of cases.
Total number of operations	**1,821**	OPERATIONS FOR REMOVAL OF FOREIGN BODIES	45
OPERATIONS ON TUMORS:			
Removal by excision	62	From—	
		Eye	17
For lipoma	9	Leg	7
For fibroma	8	Finger	14
For sarcoma	9	Hand	3
For carcinoma	8	Arm	4
For condyloma	10		
For epithelioma	8	OPERATIONS ON BLOOD VESSELS	56
For hematoma	7		
For myxoma	3	Operations on arteries	7
		Ligation for hemorrhage	5
OPERATIONS ON CYSTS	36	For aneurism	2
		Operations on veins	49
Sebaceous cyst	29		
Bursal cyst	3	Obliteration of varices leg	48
Serous cyst of neck	2	Rupture internal saphenous	1
Dermoid cyst	2		
		OPERATIONS ON NERVES	6
EVACUATION OF ABSCESSES:			
By free incision and drainage	149	Stretching of a nerve	2
		Union of divided nerve	3
Abscess of—		Resection of nerve	1
Arm	28		
Axilla	4	OPERATION ON THE LYMPHATIC ORGANS	298
Back	4		
Face	8	Incision and drainage of inflamed and suppurating glands	165
Foot	6		
Finger	10	Groin	157
Hand	24	Neck	7
Ischio rectal fossa	16	Axilla	1
Knee	6		
Leg	9	Removal of lymphatic glands	133
Neck	11		
Perineum	4	Groin	129
Thigh	5	Neck	4
Scrotum	2		
Testis	3		
Perinephritic	2	OPERATIONS ON THE SKIN AND SUBCUTANEOUS TISSUE	128
Postpharyngeal	1		
Tonsil	1	For chronic ulcer of leg	26
Penis	2	Wound of—	
Pelvis	1	Scalp	17
Buttock	2		

TABLE VII.—SURGICAL OPERATIONS, FISCAL YEAR 1907—Continued.

Operations.	No. of cases.
OPERATIONS ON THE SKIN AND SUBCUTANEOUS TISSUE—Continued.	
Face	5
Arm	11
Hand	14
Leg	11
Foot	13
Skin graft for—	
Burn	8
Ulcer	17
Denuded surface	1
Ingrowing toe nail	5
OPERATIONS ON BONES	72
Excision of portion of bone	9
Of tibia	1
Of femur	1
Of ribs	1
Of metatarsal	1
Of ulna	1
Of Sternum	1
Of Coccyx	1
Of phalanx	2
Removal of fragments of bones by curetting and scraping	27
Of inferior maxilla	4
Of tibia	3
Of superior maxilla	2
Of femur	3
Of ulna	1
Of clavicle	1
Of phalanx	10
Of skull	1
Of nasal bones	1
Of sacrum	1
Operations for ununited fractures	4
Of tibia and fibula	[a] 2
Of femur	[a] 1
Of tibia	1
Operations on fractured bones for fracture of	32
Inferior maxilla	[b] 6
Humerus	[b] 2
Radius and ulna	[b] 3
Patella	[b] 3
Femur	[b] 2
Tibia and fibula	[b] 7
Tibia	[b] 2
Clavicle	1
Phalanx	4
Ulna	1
Superior maxillary	1
OPERATIONS ON JOINTS	36
Reduction of dislocation	18
Shoulder	9
Elbow	2
Hip	3
Inferior maxilla	2
Ankle	1
Astragalus	1
Operations for anchylosis of joints	7
Finger	1
Knee	4
Elbow	2
Aspiration	9
OPERATIONS ON JOINTS—Continued. Aspiration—Continued.	
Elbow	2
Knee	7
Excision of joints	2
Phalangeal	1
Elbow	1
OPERATIONS ON MUSCLES, TENDONS, AND FASCIA	10
Tenotomy	5
Tenotomy ocular	1
Suture of tendon	4
AMPUTATIONS	89
Of thigh	3
Of leg	8
Of arm	2
Of finger	54
Of toe	17
Of foot	3
Of hand	2
OPERATIONS ON THE SKULL	13
Trephining and removal of portions of bone	8
Opening of mastoid cells	5
OPERATIONS ON FACE, NASAL CAVITIES, AND MOUTH	15
For deformity of nose	2
Removal of polypi	1
For deviation of nasal septum	3
Removal of tonsils	7
Removal of turbinate	1
Amputation of uvula	1
Laryngotomy	1
Tracheotomy	2
OPERATIONS ON THE EYE AND ITS APPENDAGES	8
Extraction of lens	3
Excision of eyeball	3
Removal of pterygium	2
OPERATIONS ON THE THORAX AND BREAST	72
Paracentesis of the pleural cavity	63
Thoracotomy with excision of part of rib	4
Thoracotomy, simple incision	5
OPERATIONS OF THE ABDOMEN	218
Abdominal section	87
Appendicitis	63
Peritonitis	5
Exploration	6
Gastro-enterostomy	3
Suture of intestines	3
Cholecystotomy	2
Gastrostomy	1
Colostomy	1
Cholecystectomy	1
Appendicostomy	2
Operations for hernia	131

[a] Wired.

[b] Bones wired, or fragments removed.

TABLE VII.—SURGICAL OPERATIONS, FISCAL YEAR 1907—Continued.

Operations.	No. of cases.
OPERATIONS OF THE ABDOMEN—Cont'd.	
For radical cure—	
(1) Oblique inguinal	130
(2) Strangulated	1
OPERATIONS ON THE RECTUM AND ANUS.	95
For fistula in ano	44
For anal fissure	7
For hemorrhoids	41
Rectectomy	1
Stricture of rectum	1
Prolapse of rectum	1
OPERATIONS ON THE BLADDER AND URETHRA	154
Upon bladder	3
Suprapubic cystotomy	3
For stricture of urethra	149
By gradual dilatation	112
By internal urethrotomy	14
By external urethrotomy	23
Fistula of urethra	2

Operations.	No. of cases.
OPERATIONS ON THE MALE GENERATIVE ORGANS	258
For phimosis	[a] 163
For varicocele	39
For deformity of penis	1
Amputation of penis	2
Prostatectomy	2
For hydrocele	45
(1) By tapping	5
(2) By tapping and injection	8
(3) Excision of parietal part of sac	27
(4) Incision and drainage	5
Castration	5
Orchidectomy	1
OPERATIONS ON THE FEMALE GENERATIVE ORGANS	1
Curettage of uterus	1

[a] Circumcision.

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